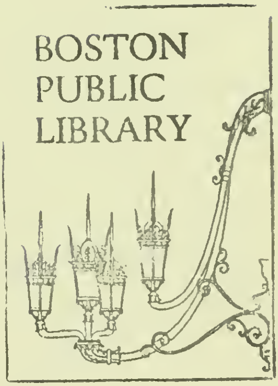
GOVDOC
BRA
778



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GEOTECHNICAL DATA REPORT
BRA PARCEL B
BOSTON, MASSACHUSETTS

PREPARED FOR:
Asian Community Development Corporation
360-B Tremont Street
Boston, Massachusetts

PREPARED BY:
GZA GeoEnvironmental, Inc.
Newton Upper Falls, Massachusetts

August 1991
File No. 12535

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GZA
GeoEnvironmental, Inc.
Engineers and
Scientists

GZA

320 Needham Street
Newton Upper Falls
Massachusetts 02164
617-969-0050
FAX 617-965-7769

A Subsidiary of GZA
GeoEnvironmental
Technologies, Inc.

August 2, 1991
File No. 12535-C,PC

Asian Commumity Development Corporation
360-B Tremont Street
Boston, Massachusetts 02116

Attention: Ms. Carol Lee, Executive Director

Re: Geotechnical Data Report
BRA Parcel B
Boston, Massachusetts

Dear Ms. Lee:

Following the completion of subsurface explorations and geotechnical laboratory testing, GZA GeoEnvironmental, Inc. is pleased to present this geotechnical data report summarizing our findings. These data include a location plan of the proposed Parcel B development, locations of the borings, profiles of the subsurface explorations interpreted from the boring data which are more fully described on the enclosed individual boring logs, and the results of laboratory testing performed on selected undisturbed samples of the underlying clay deposits.

In addition to the enclosed data specific to the Parcel B site, also contained are the results of the subsurface explorations and laboratory testing completed for the adjacent Parcel A site for Chinese Economic Development Corporation (CEDC).

The borings indicate the subsurface profile consists of miscellaneous fill, overlying compressible silty clay soils, overlying a thin glacial till, overlying argillite bedrock. The primary foundation engineering consideration is whether or not deep foundations should be used. This is a function of estimated total settlement due to compression of clay soils under the imposed structural loads from the proposed structures. Secondly, consideration must be given for the potential differential settlement between structures of differing foundation loads. Finally, consideration must be given to the potential costs relative to disposal of the on-site fills, which is somewhat dependant on the number of basement levels and the foundation scheme ultimately selected.

Three foundation systems are presently under consideration; a mat foundation bearing on the upper stiff clay deposit, caissons bearing within the clay, and deep end bearing piles bearing on the glacial till and/or bedrock. Each of these likely foundation schemes will be more fully discussed in a forthcoming foundation design summary report. This report will present a comparative cost analysis of the various alternates along with excavation and disposal cost estimates.

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In the meantime, should you have any questions with regard to the data contained herein, please do not hesitate to contact the undesigned.

Very truly yours,

GZA GEOENVIRONMENTAL, INC.

Franklin M. Grynkewicz

Franklin M. Grynkewicz
Senior Project Manager

Walter E Jaworski

Walter E. Jaworski
Senior Principal

FMG:idm

FIGURES

BRA PARCEL B - BORING LOGS

GZA GeoEnvironmental, Inc.
Engineer's/Scientists

320 Needham Street
Newton Upper Falls, Massachusetts 02164
(617) 969-0050

ACDC - Parcel B

Chinatown/Boston, Massachusetts

Boring No. GZB-1
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Chkd. By: FMG

oring Co. GZA Drilling, Inc.
oreman C. Linling/P. Brown
ZA Rep. M.A. Ponti/ck
ate Start 6/15/91 End 6/19/91
ocation See Exploration Location Plan
S.Elev. Datum

	Casing	Sampler
Type	HW/NW	Split Spoon
I.D./O.D.	4"/3"	2"
Hammer Wt.	300#	140#
Hammer Fall	24"	30"

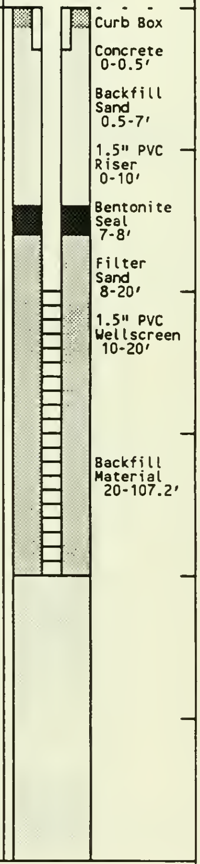
Other 3-3/4" HSA; 3" Denison Tube; NX Split Barrel

Groundwater Readings

Date	Time	Depth	Casing	Stab. Time
6/15/91	1300	12'	20'	0 Hrs.

D P T H	C S N G	B L W S	Sample Information No.	Pen./ Rec.	Depth (Ft.)	Blows/ 6"	HNu Test Data	Sample Description & Classification	Stratum Description	R M K S
			S-1	24/16	0-2	7-5	ND	Medium dense, dark brown, fine to coarse SAND, some(+) Silt, little(+) Gravel (Bricks, FILL).	2" ASPHALT	1. 2.
						9-13				
5			S-2	24/20	5-7	6-6	14.8	Medium dense, dark brown, fine to coarse SAND, some(+) Silt, little(+) Gravel, trace(+) Clay (Bricks, FILL).	GRANULAR FILL	
						5-7				
10			S-3	24/12	10-12	18-9	65	Medium dense, dark brown, fine to coarse SAND, some(+) Silt, little(+) Gravel (Brick, Wood, FILL).		3.
						8-6			± 12.5'	
			S-4	24/16	13-15	10-10	2.2	Very stiff, olive brown, Silty CLAY (moist, highly plastic).	OLIVE BROWN SILTY CLAY	
						12-14				
15										
									± 17.5'	
			S-5	24/21	18-20	6-7	ND	Stiff, gray, Silty CLAY (moist, highly plastic).		
						6-6				
20										
									GRAY SILTY CLAY	
			S-6	24/19	23-25	4-5	ND	Stiff, gray, Silty CLAY, (moist, highly plastic).		
						5-5				
25										
			S-7	24/19	28-30	3-4	ND	Stiff, gray, Silty CLAY, (moist, highly plastic).		
						4-4				

Equipment Installed



Remarks

1. H-Nu readings represent total organic vapor levels, referenced to a benzene standard, measured in the headspace of sealed soil sample jars using an H-Nu Model PI-101 photoionization analyzer. Results in parts per million (ppm). ND indicates nothing detected. Testing performed at GZA's Newton laboratory.
2. Locking curb box installed with concrete seal at ground surface.
3. Slight petroleum odor from sample S-3.

tratification lines represent approximate boundaries between soil types, transitions may be gradual. Water level eadings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to factors ther than those present at the time measurements were made.

Boring No. GZB-1

GZA GEOENVIRONMENTAL, INC.
Engineers/Scientists

320 Needham Street
Newton Upper Falls, Massachusetts 02164
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ACDC - Parcel B

Chinatown/Boston, Massachusetts

Boring No. GZB-1
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File No. 12535
Chkd. By: FMG

DEPTH	CSNG	BLWS	No.	Pen./Rec.	Depth (Ft.)	Blows/6"	HNu Test Data	Sample Description & Classification	Stratum Description	RMKS	Equipment Installed
			S-8	24/23	33-35	2-2 3-3	ND	Medium stiff, gray, Silty CLAY (moist, highly plastic).			
35											
40			T-1	24/24	40-42	300 psi push			GRAY SILTY CLAY		Backfill Material 20-107.2'
			S-9	24/24	42-44	2-2 3-5	ND	Medium stiff, gray Silty CLAY (moist, highly plastic).			
45											
			S-10	24/21	48-50	1-3 2-4	ND	Medium stiff, gray, Silty CLAY (moist, highly plastic).			
50			T-2	24/	50-52	300 psi push					
			S-11	24/23	52-54	4-4 5-6	ND	Stiff, gray, Silty CLAY (moist, highly plastic).			
55											
60			T-3	24/	60-62	300 psi push					
			S-12	24/24	62-64	3-5 4-7	ND	Stiff, gray, Silty CLAY (moist, highly plastic).			

Remarks

Stratification lines represent approximate boundaries between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to factors other than those present at the time measurements were made.

Boring No. GZB-1

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DEPTH	CSNG	BLWS	No.	Pen./ Rec.	Depth (Ft.)	Blows/ 6"	HNu Test Data	Sample Description & Classification	Stratum Description	RMKS	Equipment Installed
70			T-4	24/	70-72	300 psi push					
			S-13	24/12	72-74	3-5	ND	Stiff, gray, Silty CLAY (moist, highly plastic).	GRAY SILTY CLAY		
						5-6					
75											
80			S-14	24/24	80-82	3-3	ND	Medium stiff, gray, Silty CLAY (moist, highly plastic).			Backfill Material 20-107.2'
						5-6					
85									87' ±		
			S-15	24/14	88-90		ND	Wet, very dense, gray, fine to coarse SAND, little(+) Gravel, little(+) Silt.	GLACIAL TILL		
90											
									94.5' ±	4.	
95						min/ft					
			C-1	60/42	97.3-102.3		RQD=70	Hard, freshly weathered, slightly fractured dark gray, ARGILLITE; close-moderately close drilling breaks along moderately dipping bedding planes; occasional calcite fillings parallel-perpendicular to bedding planes.	ARGILLITE BEDROCK	5.	
						3.5					
						4					
						4.2					

Remarks

4. Roller bit through rock between 94.5 and 97.3 feet.
5. NX split barrel sampler used to core rock; for rock coring, the number in the blows/6" column is minutes per foot of coring.

Stratification lines represent approximate boundaries between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to factors other than those present at the time measurements were made.

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ACDC - Parcel B

Chinatown/Boston, Massachusetts

Boring No. GZB-1
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File No. 12535
Chkd. By: FMG

D P T H	C S N G	B L W S	Sample Information No.	Pen./ Rec.	Depth (Ft.)	Blows/ 6"	HNu Test Data	Sample Description & Classification	Stratum Description	R M K S	Equipment Installed
						4.0		Hard, freshly weathered, slightly fractured dark gray, ARGILLITE; close-moderately close drilling breaks along moderately dipping bedding planes; occasional calcite fillings parallel-perpendicular to bedding planes.	ARGILLITE BEDROCK		Backfill Material 20-107.2'
						5.0					
			C-2	60/57	102.3-107.3	4.3	RQD=95				
						3.5					
						3.7					
05						3					
						3.3					
								Bottom of Boring at 107.2 Feet.			
10											
15											
20											
25											
30											

Remarks

tratification lines represent approximate boundaries between soil types, transitions may be gradual. Water level eadings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to factors ther than those present at the time measurements were made.

Boring No. GZB-1

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ewton Upper Falls, Massachusetts 02164
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ACDC - Parcel B

Chinatown/Boston, Massachusetts

Boring No. GZB-2
Page 1 of 2
File No. 12535
Chkd. By: FMG

ring Co. GZA Drilling, Inc.
reman C. Linling/Peter Brown
A Rep. M.A. Ponti/ck
te Start 6/13/91 End 6/13/91
cation See Exploration Location Plan
.Elev. Datum Other 3-3/4" HSA

	Casing	Sampler
Type	HW/NW	Split Spoon
I.D./O.D.	4"/3"	2"
Hammer Wt.	300#	140#
Hammer Fall	24"	30"

Groundwater Readings

Date	Time	Depth	Casing	Stab. Time
6/13/91	1201	10.8'	20	0 Hrs.

	C S N G	B L W S	No.	Pen./ Rec.	Depth (Ft.)	Blows/ 6"	HNu Test Data	Sample Description & Classification	Stratum Description	R M K S	Equipment Installed
			S-1	24/17	0-2	5-13	1.0	Medium dense, black, fine to coarse SAND, some(+) Gravel, some(-) Silt (Brick, Glass, FILL).			NO EQUIPMENT INSTALLED
						6-12					
									GRANULAR FILL		
5			S-2	24/19	5-7	8.3	ND	Medium stiff, olive brown, SILT and CLAY (moist, FILL).			
						3-4					
10			S-3	24/20	10-12	5-8	0.8	Medium dense, olive gray, fine to coarse SAND and Clayey SILT (moist FILL).	11' ±		Backfill Material 0-42'
			S-3A			12-6	ND	3A: Olive brown, Silty CLAY (moist, highly plastic).			
									OLIVE BROWN SILTY CLAY		
			S-4	24/23	13-15	6-8	ND	Very stiff, Olive brown, Silty CLAY (moist, highly plastic).			
						8-8					
15											
									± 17.5'		
20			S-5	24/24	20-22	5-6	ND	Stiff, gray, Silty CLAY (moist, very highly plastic).			
						7-7			GRAY SILTY CLAY		
25			S-6	24/24	25-27	4-5	ND	Stiff, gray, Silty CLAY (moist, very highly plastic).			
						7-7					

Remarks

1. See Remark No. 1 on Boring Log No. GZB-1.
2. See Remark No. 2 on Boring Log No. GZB-1.

tratification lines represent approximate boundaries between soil types, transitions may be gradual. Water level eadings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to factors ther than those present at the time measurements were made.

Boring No. GZB-2

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ACDC - Parcel B

Chinatown/Boston, Massachusetts

Boring No. GZB-2
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File No. 12535
Chkd. By: FMG

DPTH	CSNG	BLWS	Sample Information					Sample Description & Classification	Stratum Description	RMKS	Equipment Installed
			No.	Pen./ Rec.	Depth (Ft.)	Blows/ 6"	HNu Test Data				
			S-7	24/24	30-32	4-5	ND	Stiff, gray, Silty CLAY (moist, highly plastic).	GRAY SILTY CLAY		Backfill Material 0-42'
						5-4					
35			S-8	24/24	35-37	2-3	ND	Medium stiff, gray, Silty CLAY (moist, very highly plastic).			
						2-2					
40			S-9	24/24	40-42	3-4	ND	Medium, stiff, gray, Silty CLAY (highly plastic).			
						3-3					
								Bottom of Boring at 42 Feet.			
45											
50											
55											
60											

Remarks

tratification lines represent approximate boundaries between soil types, transitions may be gradual. Water level eadings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to factors ther than those present at the time measurements were made.

Boring No. GZB-2

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Engineers/Scientists

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ACDC - Parcel B

Chinatown/Boston, Massachusetts

Boring No. GZB-3
Page 1 of 3
File No. 12535
Chkd. By: FMG

Boring Co. GZA Drilling, Inc.
Foreman C. Linling
GZA Rep. C. Marshall/ck
Date Start 6/07/91 End 6/13/91
Location See Exploration Location Plan
GS.Elev. Datum

	Casing	Sampler
Type	HW/NW	Split Spoon
I.D./O.D.	4"/3"	1-3/8"
Hammer Wt.	300#	140#
Hammer Fall	24"	30"
Other	3-3/4 HSA	NX SPlit Barrel

Groundwater Readings

Date	Time	Depth	Casing	Stab. Time
6/7/91	1300	NA	10	0

DEPTH	CSNG	BLWS	Sample Information No.	Pen./Rec.	Depth (Ft.)	Blows/6"	HNu Test Data	Sample Description & Classification	Stratum Description	RMKS	Equipment Installed
			S-1	24/14	0-2	9-11	2.2	Medium dense, black, fine to coarse SAND, some(-) Silt (brick, FILL).		1. 2.	NO EQUIPMENT INSTALLED
						9-12					
5			S-2	24/17	5-7	10-17	6.8	Dense, brown-black, fine to coarse SAND, some(-) Silt, little(-) Gravel.	GRANULAR FILL		
						14-12					
10			S-3	24/3	10-12	1-1	0.5	Moist, very loose, olive-brown, fine to coarse SAND, some(+) Silt and Clay.		3.	Backfill Material 0-100'
						1-2					
									± 13.5'		
										4.	
15			S-4	0/0	15-17	100/0"		No Recovery.			
			S-5	24/20	17-19	11-12	ND	Very stiff, olive-brown, CLAY, little(-) Silt (plastic).	OLIVE BROWN SILTY CLAY		
						10-9		Pp = 1.7 tsf, Tv = 0.8 tsf			
20			S-6	0/0	21-23	30/0		Pulled HSA and dropped 4" HW casing to 20.5'. No Sample Recovery.		5.	
									23' ±		
25									GRAY SILTY CLAY		
			S-7	24/24	28.5-30.5	2-3	ND	Medium stiff, gray, Silty CLAY (moist, highly plastic).			
						5-5					

Remarks

1. See Remark No. 1 on Boring Log No. GZB-1.
2. See Remark No. 2 on Boring Log No. GZB-1.
3. Groundwater encountered at approximately 11 feet.
4. Encountered obstruction at 14'; refusal at 15'; augers through obstruction at 18.5'.
5. Encountered obstruction at 19.5'-21.8'; and 25'-26.5'.

Stratification lines represent approximate boundaries between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to factors other than those present at the time measurements were made.

Boring No. GZB-3

GZA GEOENVIRONMENTAL, INC.
Engineers/Scientists

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Newton Upper Falls, Massachusetts 02164
(617) 969-0050

ACDC - Parcel B

Chinatown/Boston, Massachusetts

Boring No. GZB-3
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File No. 12535
Chkd. By: FMG

DPTH	CSNG	BLWS	Sample Information No.	Pen./ Rec.	Depth (Ft.)	Blows/ 6"	HNu Test Data	Sample Description & Classification	Stratum Description	RMKS	Equipment Installed
			S-7	24/24	28.5-30.5	5-5	ND	Stiff, gray, Silty CLAY (very highly plastic).			NO EQUIPMENT INSTALLED
35			S-8	24/24	35-37	2-2	0.2	Medium stiff, gray, Silty CLAY (moist very highly plastic).	GRAY SILTY CLAY		
						4-4					
40			S-9	24/24	40-42	1-1	ND	Soft, gray, Silty CLAY (moist, very highly plastic).			Backfill Material 0-100'
			S-9A			2-2		S-9A: Soft, gray, Silty CLAY, trace(+) fine Sand and Silt partings.			
									43.5' ±		
45			S-10	24/24	45-47	1-1	ND	Very soft, SILT and CLAY (moist, low plasticity).	GRAY SILT AND CLAY		
			S-10A			1-2					
									48.5' ±		
50			S-11	24/24	50-52	2-1	ND	Soft, gray, Silty CLAY (very highly plastic).			
						3-3					
55			S-12	24/24	55-57	2-3	ND	Medium stiff, gray, Silty CLAY (very highly plastic).	GRAY SILTY CLAY		
						2-2					
60			S-13	24/24	60-62	2-2	ND	Medium stiff, gray, Silty CLAY (very highly plastic).			
						3-4					

Remarks

tratification lines represent approximate boundaries between soil types, transitions may be gradual. Water level eadings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to factors ther than those present at the time measurements were made.

Boring No. GZB-3

GZA GEOENVIRONMENTAL, INC.
Engineers/Scientists

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ACDC - Parcel B

Chinatown/Boston, Massachusetts

Boring No. GZB-3
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File No. 12535
Chkd. By: FMG

DEPTH	CSNG	BLWS	Sample Information No.	Pen./ Rec.	Depth (Ft.)	Blows/ 6"	HNu Test Data	Sample Description & Classification	Stratum Description	RMKS	Equipment Installed
			S-14	24/24	65-67	2-3	ND	Medium stiff, gray, Silty CLAY (very highly plastic).			NO EQUIPMENT INSTALLED
						4-4					
70			S-15	24/24	70-72	1-3	ND	Medium stiff, gray, Silty CLAY (very highly plastic).	GRAY SILTY CLAY		
						2-4					
75			S-16	24/18	75-77	2-2	ND	Soft, gray, Silty CLAY (very highly plastic).			Backfill Material 0-100'
						2-2					
									± 78'		
			S-17	24/4	78-80	43-61	ND	Very dense, gray GRAVEL and fine to coarse SAND, trace(+) Silt.		6.	
						60-74					
80											
									GLACIAL TILL		
			S-18	24/0	83-85	115-59	ND	No Recovery.			
85						36-34					
			S-19	19/4	85-86.5	37-46	1.4	Very dense, gray GRAVEL, some Silt and fractured Rock, little fine to coarse Sand (Sand mostly wash from S-18). Dropped 3" NW CASING to 90'.	± 86.6'		
						58-115/2"					
						min/ft					
90			C-1	60/ 59.5	90-95	3	RQD=99	Hard, freshly weathered, slightly fractured sound, dark gray ARGILLITE; close to moderately close drilling breaks parallel-perpendicular to bedding planes; occasional calcite fillings parallel-perpendicular to bedding planes.		7.	
						3.5			ARGILLITE BEDROCK		
						4					
						3.5					
						3.2					
95			C-2	60/60	95-100	3 min.		Hard, freshly weathered, slightly fractured sound, dark gray ARGILLITE; close to moderately close drilling breaks parallel-perpendicular to bedding planes; occasional calcite fillings parallel-perpendicular to bedding planes.			
						3.1					
						3.2					
						3.5					
						4.1					

Bottom of Boring at 100 Feet.

Remarks

6. Driller noted gravel in wash and increased resistance to drill bit at 78 feet.
7. Roller bit through rock between 86.6 and 90 feet.
8. For coring, the number in the blows/6" column is minutes per foot of coring.

tratification lines represent approximate boundaries between soil types, transitions may be gradual. Water level eadings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to factors ther than those present at the time measurements were made.

Boring No. GZB-3

GZA GeoEnvironmental, Inc.
Engineers/Scientists

320 Needham Street
Newton Upper Falls, Massachusetts 02164
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ACDC - Parcel B

Chinatown/Boston, Massachusetts

Boring No. GZB-4
Page 1 of 2
File No. 12535
Chkd. By: FMG

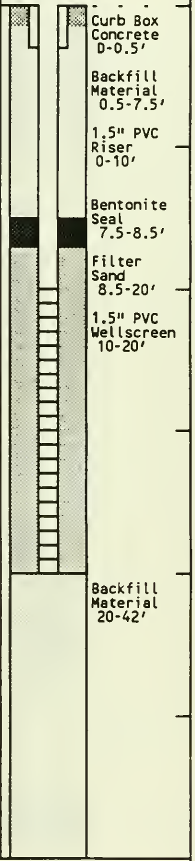
oring Co.	GZA Drilling, Inc.		Casing	Sampler
oreman	C. Linling/P. Brown	Type	HW/NW	Split Spoon
ZA Rep.	M.A. Ponti/ck	I.D./O.D.	4"/3"	2"
ate Start 6/14/91	End 6/14/91	Hammer Wt.	300#	140#
ocation	See Exploration Location Plan	Hammer Fall	24"	30"
S.Elev.	Datum	Other	3-3/4" HSA; 3" Denison Tube	

Groundwater Readings

Date	Time	Depth	Casing	Stab. Time
6/14/91	1300	11'	20'	0 Hrs.
6/19/91	0900	10'	Out	5 Days ±

T H	C S N G	B L W S	Sample Information No.	Pen./ Rec.	Depth (Ft.)	Blows/ 6"	HN-u Test Data	Sample Description & Classification	Stratum Description	R M K S
			S-1	24/24	0-2	8-6	ND	Medium dense, dark brown, fine to coarse SAND, some(+) Silt, little(+) Gravel (brick, FILL).	Cobblestones	
						5-5			FILL	
5			S-2	24/18	5-7	7-11	ND	Very stiff, olive brown, CLAY and SILT, and fine to coarse SAND, some(+) Silt, little(+) Gravel (brick, FILL).		
						9-10			± 8.5'	
10			S-3	24/	10-12	9-12	ND	Very stiff, olive brown, CLAY and SILT.	CLAY AND SILT	
						14-11				
15			S-4	24/24	15-17	4-6	ND	Very stiff, olive brown, CLAY and SILT, trace(-) fine Sand layers.		
						8-15			± 18.5'	
20			T-1	12/12	20-21	Push 300 psi			OLIVE BROWN SILTY CLAY	
			S-5	24/24	21-23	7-9	1.7	Very stiff, olive brown, Silty CLAY (moist, highly plastic).		
						8-7			± 24'	
25			S-6	24/24	25-27	2-2	ND	Medium stiff, gray, Silty CLAY.	GRAY SILTY CLAY	
						3-4				

Equipment Installed



1. See Remark No. 1 on Boring Log GZB-1.
2. See Remark No. 2 on Boring Log GZB-1.

tratification lines represent approximate boundaries between soil types, transitions may be gradual. Water level eadings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to factors ther than those present at the time measurements were made.

Boring No. GZB-4

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Chinatown/Boston, Massachusetts

Boring No. GZB-4
Page 2 of 2
File No. 12535
Chkd. By: FMG

DEPTH	CSNG	BLWS	Sample Information					Sample Description & Classification	Stratum Description	RMKS	Equipment Installed
			No.	Pen./ Rec.	Depth (Ft.)	Blows/ 6"	HNu Test Data				
			T-2	24/24	30-32	300 psi push					Backfil Material 20-42'
			S-7	24/24	32-34	4-3	ND	Medium stiff, soft, gray Silty CLAY (moist, highly plastic).	GRAY SILTY CLAY		
						3-4					
35			S-8	24/24	35-37	2-3	ND	Medium stiff, soft, gray Silty CLAY (moist, highly plastic).			
						2-2					
40			S-9	24/24	40-42	2-3	ND	Medium stiff, soft, gray Silty CLAY (moist, highly plastic).			
						4-4					
								Bottom of Boring at 42 Feet.			
45											
50											
55											
60											

Remarks

tratification lines represent approximate boundaries between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to factors other than those present at the time measurements were made.

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Boring No. GZB-5
Page 1 of 2
File No. 12535
Chkd. By: FMG

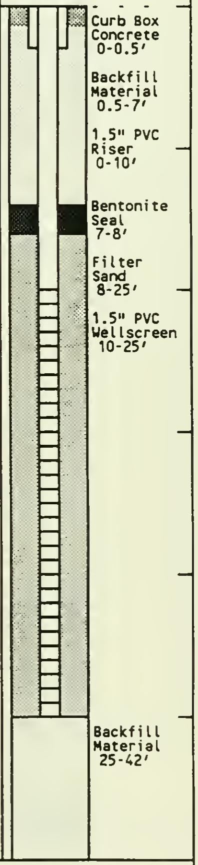
			Casing	Sampler
oring Co.	GZA Drilling, Inc.	Type		Split Spoon
oreman	George S./Charles L.	I.D./O.D.		2"
ZA Rep.	M.A. Ponti/ck	Hammer Wt.		140#
ate Start	6/05/91 End 6/06/91	Hammer Fall		30"
ocation	See Exploration Location Plan	Other	3-3/4" HSA	
S.Elev.	Datum			

Groundwater Readings

Date	Time	Depth	Casing	Stab. Time
6/5/91	1400	none	15.5	0 Hrs.
6/7/91	0730	11.75	-	17 ± Hrs.
6/8/91	0630	10.78	-	1.8 days ±
6/19/91	0700			

DEPTH	CSNG BLWS	Sample Information No.	Pen./Rec.	Depth (Ft.)	Blows/6"	HNu Test Data	Sample Description & Classification	Stratum Description	RMKS
		S-1	24/14	0-2	6-14	ND	Dense, gray, fine to coarse SAND, some(+) Gravel, some(-) Silt (brick, FILL).		1. 2.
					16-21				
5		S-2	24/18	5-7	3-2	0.5	Very loose, gray, fine to coarse SAND and Clayey Silt (moist, FILL).	GRANULAR FILL	
					1-3				
									3.
10		S-3	24/11	9.5-11.5	11-3	1.2	Loose, gray, fine to coarse SAND, some(+) Clayey Silt (wet, FILL).		
					7-10				
								± 13.5'	
								SILT	
15		S-4	24/24	15.5-17.5	10-17	ND	Moist, dense, light brown, SILT, some(-) fine Sand.	± 16'	
		S-4A			14-12	ND	S-4A: Moist, light brown, Silty CLAY.	CLAY AND SILT	
20		S-5	24/24	20-22	5-6	30	Stiff, olive brown, CLAY and SILT (moist, medium plastic).		
		S-5A			6-7	1.2			
								± 23.5'	
25		S-6	24/24	25-27	3-4	27	Stiff, gray, Silty CLAY, trace(+) fine Sand and Silt lenses (1-2" thick, moist, highly plastic).	GRAY SILTY CLAY	
		S-6A			5-6	ND			

Equipment Installed



Remarks

1. See Remark No. 1 on Boring Log GZB-1.
2. Locking curb box installed with concrete at ground surface.
3. Obstruction encountered between ± 8 and ± 9.5 feet below existing grade.
4. Approximately 5 to 6 inches of fine sand and silt layers were encountered in split spoon samples S-7A and S-8.
5. Strong petroleum odor similar to gasoline encountered while adding filter sand; odor stopped after filter sand added to 8 feet below grade.

tratification lines represent approximate boundaries between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to factors other than those present at the time measurements were made.

Boring No. GZB-5

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Boring No. GZB-5
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File No. 12535
Chkd. By: FMG

Depth	CSNG	BLWS	Sample Information No.	Pen./ Rec.	Depth (Ft.)	Blows/ 6"	HNu Test Data	Sample Description & Classification	Stratum Description	RMKS	Equipment Installed
			S-7	24/24	30-32	1-3	0.8	Medium stiff, loose, gray, Silty CLAY (moist, highly plastic). S-7A: Gray, fine SAND and SILT (moist, highly plastic). S-7B: Gray, Silty CLAY (moist, highly plastic).	F.SAND&SILT GRAY SILTY CLAY ± 33.5' FINE SAND & SILT ± 35.5'	4.	Backfill Material 25-42'
			S-7A/S-7B			4-5	0.2/ND				
35			S-8	24/24	35-37	3-4	ND	Loose, gray, fine SAND and SILT, trace(+) Clay (moist). S-8A: Medium stiff, gray, Silty CLAY, (moist, highly plastic).	GRAY SILTY CLAY	4.	
			S-8A			4-5	ND				
40			S-9	24/24	40-42	3-4	ND	Stiff, gray, Silty CLAY (moist, highly plastic).			
						5-5				5.	
								Bottom of Boring at ± 42 Feet.			
45											
50											
55											
60											

ratification lines represent approximate boundaries between soil types, transitions may be gradual. Water level eadings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to factors her than those present at the time measurements were made.

Boring No. GZB-5

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ACDC - Parcel B

Chinatown/Boston, Massachusetts

Boring No. GZB-6
Page 1 of 2
File No. 12535
Chkd. By: FMG

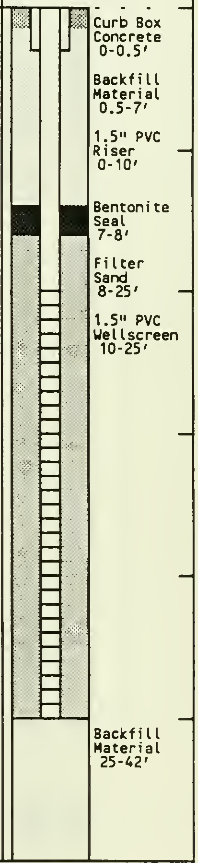
oring Co.	GZA Drilling, Inc.		Casing	Sampler
oreman	C. Linling	Type	HW/NW	Split Spoon
ZA Rep.	M.A. Ponti/ck	I.D./O.D.	4"/3"	2"
ate Start 6/08/91	End 6/08/91	Hammer Wt.	300#	140#
ocation	See Exploration Location Plan	Hammer Fall	24"	30"
S.Elev.	Datum	Other	3-3/4" HSA	

Groundwater Readings

Date	Time	Depth	Casing	Stab. Time
6/8/91	1150	10.75	25'	0 Hrs.
6/10/91	0610	10.64	Out	± 1.8 days
6/21/91	0800	10.79	Out	± 11 days

DEPTH	CSNG	BLWS	Sample Information No.	Pen./Rec.	Depth (Ft.)	Blows/6"	HNu Test Data	Sample Description & Classification	Stratum Description	RMKS
			S-1	24/14	0-2	11-12	ND	Medium dense, black, fine to coarse SAND, some(+) Gravel, some(-) Silt (brick, FILL).		
						17-14				
5			S-2	24/19	5-7	3-4	ND	Medium dense, black, fine to coarse SAND, some(+) Gravel, some(-) Silt (concrete, brick, FILL). S-2A: Olive brown, SILT and CLAY.	GRANULAR FILL	
			S-2A			7-7	ND			
10			S-3	24/18	10-12	7-9	22	Medium dense, black, fine to coarse SAND, some(+) Silt (brick, FILL). S-3A: Olive brown, SILT and CLAY (FILL).		
			S-3A			11-15	1.2			
									± 13.5'	
15			S-4	24/24	15-17	3-4	0.3	Stiff, olive brown, SILT and CLAY (moist). S-4A: Olive brown, SILT and CLAY with trace 1/16" tan, fine SAND and SILT laminae (moist).	OLIVE BROWN SILT AND CLAY	
			S-4A			4-5				
										3.
									± 18.5'	
20			S-5	24/24	20-22	3-4	ND	Stiff, gray, Silty CLAY (moist, highly plastic).		
						4-5				
									GRAY SILTY CLAY	
25			S-6	24/24	25-27	1-2	0.6	Medium stiff, gray, Silty CLAY, trace(-) Silt laminae (moist). S-6A: Gray, Silty CLAY.		
			S-6A			3-4	0.2			

Equipment Installed



Remarks

1. See Remark No. 1 on Boring Log GZB-1.
2. Locking curb box with concrete installed at ground surface.
3. Occasional 1/16" laminae of fine Sand/Silt.
4. Sample appeared to expand inside sample jar.

tratification lines represent approximate boundaries between soil types, transitions may be gradual. Water level eadings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to factors ther than those present at the time measurements were made.

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Chinatown/Boston, Massachusetts

Boring No. GZB-6
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File No. 12535
Chkd. By: FMG

DEPTH	CSNG	BLWS	Sample Information No.	Pen./ Rec.	Depth (Ft.)	Blows/ 6"	HNu Test Data	Sample Description & Classification	Stratum Description	RMKS	Equipment Installed
			S-7	24/24	30-32	2-3	0.2	Medium stiff, gray, Silty CLAY (moist, highly plastic).			
						3-4					
35			S-8	24/24	35-37	2-3	ND	Medium stiff, Silty CLAY, trace(-) Silt laminae (moist, highly plastic).	GRAY SILTY CLAY	3. 4.	Backfill Material 25-42'
						5-4					
40			S-9	24/24	40-42	4-3	ND	Medium stiff, gray, Silty CLAY, trace(-) Silt laminae (moist, highly plastic).		4.	
						5-4					
								Bottom of Boring at ± 42 Feet.			
45											
50											
55											
60											

Remarks

tratification lines represent approximate boundaries between soil types, transitions may be gradual. Water level eadings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to factors ther than those present at the time measurements were made.

Boring No. GZB-6

BRA PARCEL A - BORING LOGS

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CEDC - Parcel A

Chinatown/Boston, Massachusetts

Boring No. GZA-1
Page 1 of 2
File No. 12547
Chkd. By: FMG

ring Co. GZA Drilling, Inc.
reman C. Lenling/P.Brown
A Rep. M.A. Ponti, Jr./ck
te Start 6/28/91 End 6/28/91
cation See Exploration Location Plan
.Elev. Datum

	Casing	Sampler
Type	HW/NW	Split Spoon
I.D./O.D.	4"/3"	2"
Hammer Wt.	300#	140#
Hammer Fall	24"	30"

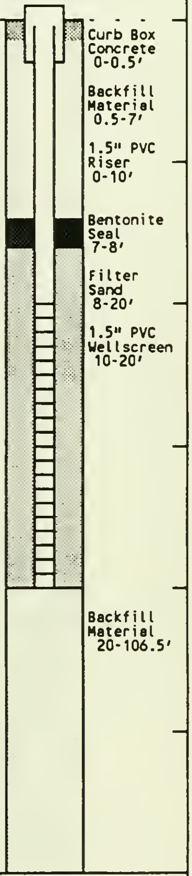
Other 3-3/4" Hollow Stem Auger

Groundwater Readings

Date	Time	Depth	Casing	Stab. Time
6/28/91	1330	11.5'	20	0 Hrs.

	C S N G	B L W S	Sample Information No.	Pen./ Rec.	Depth (Ft.)	Blows/ 6"	HNu Test Data	Sample Description & Classification	Stratum Description	R M K S
			S-1	24/17	0-2	9-11	ND	Medium dense, gray, fine to coarse SAND, little(+) Gravel, little(+) Silt (concrete FILL).	2" ASPHALT	
						14-13			GRANULAR FILL	
5			S-2	24/13	5-7	2-3	ND	Very loose, olive-brown, fine to coarse SAND, some(+) Silt, trace(-) Clay (FILL).		
						1-1				
									± 8.5'	
0			S-3	24/22	10-12	2-7	ND	Very stiff olive-brown SILT and CLAY (wet).	SILT AND CLAY	
						12-14				
									± 13.5'	
5			S-4	24/24	15-17	6-5	ND	Stiff, gray, Silty CLAY (moist, highly plastic).		
						9-12				
0			S-5	24/24	20-22	2-4	ND	Stiff, gray, Silty CLAY (moist, highly plastic).	GRAY SILTY CLAY	
					20-22	6-6				
5			S-6	24/24	25-27	6-6		Stiff, gray, Silty CLAY (moist, highly plastic).		
						6-9				

Equipment Installed



1. H-Nu readings represent total organic vapor levels, referenced to a benzene standard, measured in the headspace of sealed soil sample jars using an H-Nu Model PI-101 photoionization analyzer. Results in parts per million (ppm). ND indicates nothing detected. N indicates negative deflection of the water and may be due to high concentrations of non-ionizable species such as methane, carbon dioxide or moisture. Testing performed at GZA's Newton laboratory.

ratification lines represent approximate boundaries between soil types, transitions may be gradual. Water level
adings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to factors
her than those present at the time measurements were made.

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CEDC - Parcel A

Chinatown/Boston, Massachusetts

Boring No. GZA-1
Page 2 of 2
File No. 12547
Chkd. By: FMG

	C S N G	B L W S	Sample Information					Sample Description & Classification	Stratum Description	R M K S	Equipment Installed
			No.	Pen./ Rec.	Depth (Ft.)	Blows/ 6"	HNu Test Data				
			S-7	24/24	30-32	4-5 6-6	ND	Stiff, gray, Silty CLAY.	GRAY SILTY CLAY		Backfill Material 20-32'
								Bottom of Boring at 32 Feet.			
5											
0											
5											
0											
55											
60											

Remarks

tratification lines represent approximate boundaries between soil types, transitions may be gradual. Water level eadings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to factors ther than those present at the time measurements were made.

Boring No. GZA-1

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Chinatown/Boston, Massachusetts

Boring No. GZA-2
Page 2 of 4
File No. 12547
Chkd. By: FMG

DEPTH	CSNG	BLWS	Sample Information No.	Pen./ Rec.	Depth (Ft.)	Blows/ 6"	HNu Test Data	Sample Description & Classification	Stratum Description	RMKS	Equipment Installed
			S-7	24/22	30-32	2-2	ND	Medium stiff, gray, Silty CLAY, little(+) Silt and fine Sand laminae layers (moist).			
						5-4					
35			S-8	24/24	35-37	3-2	ND	Medium stiff, gray, Silty CLAY (moist, highly plastic).			
						4-5					
40			T-1	24/22	40-42	300 psi push					
			S-9	24/23	42-44	4-3	ND	Medium stiff, gray, Silty CLAY (moist, highly plastic).			
						3-6					
45											
50			T-2	24/12	50-52	300 psi push					
			S-10	24/24	52-54	2-4	ND	Stiff, gray, Silty CLAY, little(+) Silt and fine Sand layers/laminae.			
						6-7					
55											
60			T-3	24/19	60-62	300 psi push					
			S-11	24/22	62-64	5-6	ND	Stiff, gray, Silty CLAY, trace(-) fine to medium Sand.			
						7-10					

Remarks

Stratification lines represent approximate boundaries between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to factors other than those present at the time measurements were made.

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Chinatown/Boston, Massachusetts

Boring No. GZA-2
Page 3 of 4
File No. 12547
Chkd. By: FMG

	C S N G	B L W S	No.	Pen./ Rec.	Depth (Ft.)	Blows/ 6"	HNu Test Data	Sample Description & Classification	Stratum Description	R M K S	Equipment Installed
0			T-4	24/21	70-72	300 psi push			GRAY SILTY CLAY		
			S-12	24/23	72-74	WOR-4	ND	Stiff, gray, Silty CLAY, trace(-) fine to coarse Sand (moist).		3.	
						5-4					
5											
									± 78'		
										4.	
0			S-13	24/13	80-82	16-17	0.1	Dense, gray, fine to coarse SAND, some(+) Silt and Clay (wet).			
						16-18					
									GLACIAL TILL		
5			S-14	24/14	85-87	27-38	ND				
						47-64					
									± 90'		
0			S-15	0/0	90-90	38/0"		No Recovery.			
									ARGILLITE BEDROCK		
			R-1	60/18	92.5-97.5	3					
						3-5					
5						4					
						4					
						5					
			R-2		97.5-102.5	4	RQD=57	Hard, freshly weathered, slightly fractured, dark gray, amorphous; ARGILLITE; close, moderately dipping drilling breaks along thin bedding planes (parallel and perpendicular			
						5.3					
						5.1					

tratification lines represent approximate boundaries between soil types, transitions may be gradual. Water level eadings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to factors ther than those present at the time measurements were made.

Boring No. GZA-2

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CEDC - Parcel A

Chinatown/Boston, Massachusetts

Boring No. GZA-2
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File No. 12547
Chkd. By: FMG

DPTH	CSNG	BLWS	Sample Information					Sample	Stratum	RMKS	Equipment Installed
			No.	Pen./ Rec.	Depth (Ft.)	Blows/ 6"	HNu Test Data	Description & Classification	Description		
						5.3		to bedding); occasional calcite fillings parallel and perpendicular to bedding.	ARGILLITE BEDROCK		
						5.5					
			R-3	48/48	102.5-103.5	4.1	RQD=100	Hard, freshly weathered, slightly fractured, dark gray amorphous ARGILLITE, close, moderately dipping, drilling breaks along thin bedding planes (parallel and perpendicular to bedding); occasional calcite fillings parallel and perpendicular to bedding.			
					103.5-104.5	5.2					
					104.5-105.5	5.5					
05					105.5-106.5	5.5					
								Bottom of Boring at 106.5 Feet.			
10											
15											
20											
25											
30											

Remarks

tratification lines represent approximate boundaries between soil types, transitions may be gradual. Water level eadings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to factors ther than those present at the time measurements were made.

Boring No. GZA-2

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CEDC - Parcel A

Chinatown/Boston, Massachusetts

Boring No. GZA-3
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File No. 12547
Chkd. By: FMG

			Casing	Sampler
oring Co.	GZA Drilling, Inc.			
oreman	C. Lenling/P.Brown	Type	HW/NW	Split Spoon
ZA Rep.	M.A. Ponti, Jr./ck	I.D./O.D.	4"/3"	2"
ate Start	6/28/91 End 6/28/91	Hammer Wt.	300#	140#
ocation	See Exploration Location Plan	Hammer Fall	24"	30"
S.Elev.	Datum	Other	3-3/4" Hollow Stem Auger	

Groundwater Readings

Date	Time	Depth	Casing	Stab. Time
6/28/91	1330	11.5'	20	0 Hrs.

DEPTH	CSNG	BLWS	No.	Pen./Rec.	Depth (Ft.)	Blows/ 6"	HNu Test Date	Sample Description & Classification	Stratum Description	RMKS	Equipment Installed
			S-1	24/18	0-2	3-7	ND	Medium dense, gray-black, fine to coarse SAND, some(-) Gravel, little (+) Silt, Brick, (FILL).	2" ASPHALT	1.	No Equipment Installed
						5-5			GRANULAR FILL		
5			S-2	24/17	5-7	6-6	ND	Medium dense, dark brown, fine to coarse SAND, some(+) Silt, little(+) Gravel, Brick, (FILL).			
						8-10			± 9'		
10			S-3	24/19	10-12	4-9	ND	Very stiff, olive-brown, SILT and CLAY, little(-) fine Sand, trace(+) Gravel (wet, plastic).	SILT AND CLAY		
						8-12			± 13.5'		Backfill Material 0-73.1'
15			S-4	24/16	15-17	2-4	ND	Medium stiff, gray Silty CLAY, trace(-) fine Sand and Silt partings (moist, highly plastic).			
						4-5					
20			S-5	24/24	20-22	5-7	ND	Very stiff, gray, Silty CLAY, trace (-) fine Sand and Silt partings (moist, highly plastic).	GRAY SILTY CLAY		
						10-9					
25			S-6	24/24	25-27	3-5	ND	Stiff, gray, Silty CLAY (moist, highly plastic).			
						7-7					

Remarks

1. See Remark No. 1 on Boring Log GZA-1.
2. No samples taken between 37 and 73 feet below grade; observed gray washwater to 73 feet.
3. Used 3" HW casing to advance hole between 37 and 73 feet where casing could not advance any more; no coarse material (till) was observed within return water; Sample S-9 advanced to 73.1 feet to refusal, no sample was recovered.

tratification lines represent approximate boundaries between soil types, transitions may be gradual. Water level eadings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to factors ther than those present at the time measurements were made.

Boring No. GZA-3

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CEDC - Parcel A

Chinatown/Boston, Massachusetts

Boring No. GZA-3
Page 2 of 3
File No. 12547
Chkd. By: FMG

DEPTH	CSNG	BLWS	Sample Information					Sample Description & Classification	Stratum Description	RMKS	Equipment Installed
			No.	Pen./Rec.	Depth (Ft.)	Blows/6"	HNu Test Data				
			S-7	24/24	30-32	3-3	ND	Medium stiff, gray, Silty CLAY, little(-) fine Sand and Silt partings, (moist, highly plastic).			
						5-6					
35			S-8	24/24	35-37	2-2	ND	Medium stiff, gray, Silty CLAY, little(+) fine Sand and Silt partings (moist, highly plastic).			
						3-4					
										2.	
40								(No Samples Taken)			
45									GRAY SILTY CLAY		Backfill Material 0-73.1'
50											
55											
60											

Remarks

tratification lines represent approximate boundaries between soil types, transitions may be gradual. Water level eadings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to factors ther than those present at the time measurements were made.

Boring No. GZA-3

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CEDC - Parcel A

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Boring No. GZA-3
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File No. 12547
Chkd. By: FMG

D P T H	C S N G	B L W S	Sample Information No.	Pen./ Rec.	Depth (Ft.)	Blows/ 6"	HNu Test Data	Sample Description & Classification	Stratum Description	R M K S	Equipment Installed
								No Samples Taken.	GRAY SILTY CLAY		Backfill Material 0-73.1'
70											
								No Recovery			
			S-9	1/1	73-73.1	120/1"	ND	Bottom of Boring at 73.1 Feet.		3.	
75											
80											
85											
90											
95											

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tratification lines represent approximate boundaries between soil types, transitions may be gradual. Water level eadings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to factors ther than those present at the time measurements were made.

Boring No. GZA-3

ZA GeoEnvironmental, Inc.
gineers/Scientists

20 Needham Street
wton Upper Falls, Massachusetts 02164
17) 969-0050

CEDC - Parcel A

Chinatown/Boston, Massachusetts

Boring No. GZA-4
Page 1 of 3
File No. 12547
Chkd. By: FMG

ing Co. GZA Drilling, Inc.
eman C. Lenling/P.Brown
Rep. M.A. Ponti, Jr./ck
e Start 6/24/91 End 6/26/91
ation See Exploration Location Plan
Elev. Datum

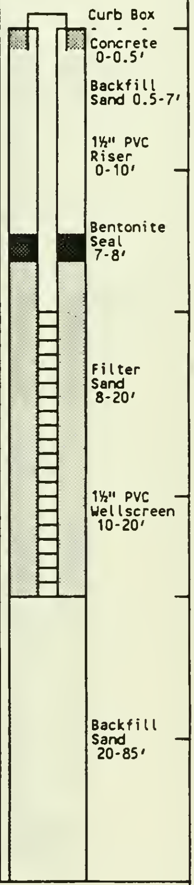
	Casing	Sampler
Type	HW/NW	Split Spoon
I.D./O.D.	4"/3"	2"
Hammer Wt.	300#	140#
Hammer Fall	24"	30"
Other	3-3/4" HSA; NX Split Barrel	

Groundwater Readings

Date	Time	Depth	Casing	Stab. Time
6/24/91	1400	11.5'	15'	0 Hrs.

	C S N G	B L W S	Sample Information No.	Pen./ Rec.	Depth (Ft.)	Blows/ 6"	HNu Test Data	Sample Description & Classification	Stratum Description	R M K S
			S-1	24/15	0-2	11-14	3.7	Dense, brown, fine to medium SAND, little(+) Silt, trace(+) fine Gravel.	2' ASPHALT	
						17-19				
									GRANULAR FILL	
5			S-2	24/24	5-7	15-6	6.0	Medium dense, brown, fine to medium SAND, some (-) fine Gravel, little (-) Silt, trace Brick.		
						5-10				
									10'	
0			S-3	24/24	10-12	2-3	ND	Loose, gray-brown, fine SAND and SILT.		
						3-5			SAND	
									15'	
5			S-4	24/24	15-17	6-5	ND	Stiff, grey CLAY and SILT, trace black organic Silt, fine Gravel.		
						6-8				
									CLAY AND SILT	
0			S-5	24/24	20-22	13-19	ND	Hard, yellow CLAY and SILT, trace fine Sand.		
						21-27			± 22.5'	
			S-6	24/16	23-25	3-4	ND	Stiff, gray, Silty CLAY, occasional fine Sand and Silt parting.		
5						5-7				
									GRAY SILTY CLAY	
			S-7	24/22	28-30	3-5	ND	Medium stiff, gray, Silty CLAY, many fine Sand and Silt partings (moist).		
						3-6				

Equipment Installed



1. See Remark No. 1 on Boring Log GZA-1.
2. Locking curb box installed with concrete at ground surface.

ratification lines represent approximate boundaries between soil types, transitions may be gradual. Water level adings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to factors her than those present at the time measurements were made.

Boring No. GZA-4

ZA GEOENVIRONMENTAL, INC.
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CEDC - Parcel A

Chinatown/Boston, Massachusetts

Boring No. GZA-4
Page 2 of 3
File No. 12547
Chkd. By: FMG

C S N G	B L W S	No.	Pen./ Rec.	Depth (Ft.)	Blows/ 6"	HNu Test Data	Sample Description & Classification	Stratum Description	RMKS	Equipment Installed
								31.5' ±		
		S-8	24/20	33-35	3-3 4-5	ND	Medium stiff, olive-gray CLAY and SILT, many fine Sand and Silt partings. One fine Sand seam 3" from tip measured 1/8" (moist).			
		S-9	24/20	38-40	2-4	ND	Top 12": Stiff, gray CLAY and SILT, occasional fine Sand and Silt partings.			
		S-9A			5-6	ND	Bottom 8": Medium dense, gray, fine SAND and Clayey SILT (moist).			
		S-10	24/22	43-45	4-4 6-7	ND	Stiff, gray CLAY and SILT, trace (-) fine Gravel, occasional fine Sand and Silt partings (moist).	GRAY CLAY AND SILT		Backfill Material 20-85'
		S-11	24/24	48-50	3-5 5-6	ND	Stiff, gray CLAY and SILT, trace (-) fine to coarse Sand, fine Gravel (moist).			
								51.5' ±		
		S-12	24/24	53-55	3-5 5-6	ND	Stiff, gray, Silty CLAY, trace (-) fine Gravel (moist).			
		S-13	24/24	58-60	WOR-WOR 3-4	ND	Soft, gray, Silty CLAY (moist).	GRAY SILTY CLAY		
		S-14	24/24	63-65	WOR-WOR 4-5	ND	Soft, olive-gray, Silty CLAY (moist).			

ratification lines represent approximate boundaries between soil types, transitions may be gradual. Water level adings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to factors her than those present at the time measurements were made.

Boring No. GZA-4

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CEDC - Parcel A

Chinatown/Boston, Massachusetts

Boring No. GZA-4
Page 3 of 3
File No. 12547
Chkd. By: FMG

	C S N G	B L W S	Sample Information					Sample Description & Classification	Stratum Description	R M K S	Equipment Installed
			No.	Pen./ Rec.	Depth (Ft.)	Blows/ 6"	HNu Test Date				
			S-15	24/24	68-70	WOR-WOR	ND	Soft, olive-gray, Silty CLAY (moist).	GRAY SILTY CLAY		
						1-1					
70								Driller noted change at 71 feet.	71'		
									GLACIAL TILL		Backfill Material 20-85'
			S-16	24/12	73-75	9-14	ND	Dense, gray, fine to coarse SAND and fine GRAVEL, little (+) Clayey Silt.			
						22-51			75'		
75			C-1	60/51	75-80	3	RQD=70	Hard, freshly weathered, slightly fractured dark gray ARGILLITE; close-moderately close drilling breaks along moderately dipping bedding planes; occasional calcite fillings parallel-perpendicular to bedding planes.	ARGILLITE BEDROCK		
						3-5					
						4					
						4-2					
						4-5					
80			C-2	60/52	80-85	4-2	RQD=75	Hard, freshly weathered, slightly fractured dark gray ARGILLITE; close-moderately close drilling breaks along moderately dipping bedding planes; occasional calcite fillings parallel-perpendicular to bedding planes.			
						5-0					
						4-5					
						4-2					
						4-0					
85								Bottom of Boring at 85 feet			
90											
95											

Remarks

tratification lines represent approximate boundaries between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to factors other than those present at the time measurements were made.

GZA GeoEnvironmental, Inc.
Engineers/Scientists

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Newton Upper Falls, Massachusetts 02164
(617) 969-0050

CEDC - Parcel A

Chinatown/Boston, Massachusetts

Boring No. GZA-5
Page 1 of 2
File No. 12547
Chkd. By: FMG

oring Co. GZA Drilling, Inc.
oreman C. Lenling/P.Brown
ZA Rep. M.A. Ponti, Jr./ck
ate Start 6/29/91 End 6/29/91
ocation See Exploration Location Plan
S.Elev. Datum

	Casing	Sampler
Type	----	Split Spoon
I.D./O.D.	----	2"
Hammer Wt.	----	140#
Hammer Fall	----	30"

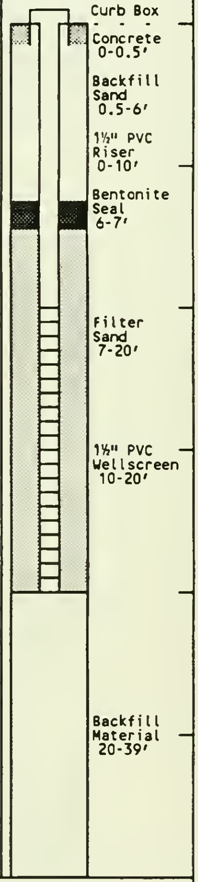
Other 3-3/4" Hollow Stem Auger

Groundwater Readings

Date	Time	Depth	Casing	Stab. Time
6/29/91	1330	11.5'	35'	0 Hours
7/2/91	0715		Out	± 1.3 Days

DEPTH	CSNG	BLWS	No.	Pen./ Rec.	Depth (Ft.)	Blows/ 6"	HNu Test Data	Sample Description & Classification	Stratum Description	RMKS
			S-1	24/16	0-2	9-15 6-10	ND	Medium dense, brown, fine to coarse SAND, some (+) Silt, little (+) Gravel Brick (FILL).	2" ASPHALT	1. 2.
5			S-2	24/17	5-7	7-7 11-13	ND	Medium dense, brown, fine to coarse SAND, some (+) Silt, little (+) Gravel Brick (FILL).	GRANULAR FILL	3.
10			S-3	24/24	10-12	3-2 2-6	8.2	Medium stiff, gray, Silty CLAY, trace (+) black organics, Wood, (moist, highly plastic).	13.5' ±	
15			S-4	24/	15-17	5-5 7-3	ND	Stiff, gray, Silty CLAY, trace (+) fine Sand and Silt partings (moist, highly plastic).		
20			S-5	24/24	20-22	3-4 4-4	ND	Stiff, gray, Silty CLAY (moist, highly plastic).	GRAY SILTY CLAY	
25			T-1	24/24	25-27	300 psi				
			S-6	24/24	27-29	3-5 4-6	ND	Stiff, gray, Silty CLAY, little (+) fine Sand and Silt partings (moist, plastic).		

Equipment Installed



Remarks

1. See Remark No. 1 on Boring Log GZA-1.
2. Locking curb box installed with concrete at ground surface.
3. Encountered obstruction between ± 7.5 and ± 9.8 feet below grade.

tratification lines represent approximate boundaries between soil types, transitions may be gradual. Water level eadings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to factors ther than those present at the time measurements were made.

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CEDC - Parcel A

Chinatown/Boston, Massachusetts

Boring No. GZA-5
Page 2 of 2
File No. 12547
Chkd. By: FMG

	C S N G	B L W S	Sample Information					Sample	Stratum	R M K S	Equipment Installed
			No.	Pen./ Rec.	Depth (Ft.)	Blows/ 6"	HNu Test Data	Description & Classification	Description		
5			T-2	24/19	35-37	300 psi			GRAY SILTY CLAY		Backfill Material 20-39'
			S-7	24/24	37-39	2-5	ND	Stiff, gray, Silty CLAY, little (-) fine Sand and Silt partings (moist, plastic).			
						4-4					
0								Bottom of Boring at 39 feet			
5											
0											
5											
0											

tratification lines represent approximate boundaries between soil types, transitions may be gradual. Water level eadings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to factors ther than those present at the time measurements were made.

Boring No. GZA-5

GZA GeoEnvironmental, Inc.
Engineers/Scientists

320 Needham Street
Newton Upper Falls, Massachusetts 02164
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CEDC - Parcel A

Chinatown/Boston, Massachusetts

Boring No. GZA-6
Page 1 of 2
File No. 12547
Chkd. By: FMG

oring Co.	GZA Drilling, Inc.		**Casing**	**Sampler**	
oreman	C. Lenling/P.Brown	Type	----	Split Spoon	
ZA Rep.	M.A. Ponti, Jr./ck	I.D./O.D.	----	2"	
ate Start	6/29/91	End 6/29/91	Hammer Wt. ----	140#	
ocation	See Exploration Location Plan	Hammer Fall	----	30"	
S.Elev.		Datum	Other	3-3/4" Hollow Stem Auger	

Groundwater Readings

Date	Time	Depth	Casing	Stab. Time
6/29/91	0920	10.9'	20'	0 Hours

DEPTH	CSNG	BLWS	Sample Information No.	Pen./Rec.	Depth (Ft.)	Blows/6"	HNu Test Data	Sample Description & Classification	Stratum Description	RMKS	Equipment Installed
			S-1	24/14	0-2	10-5	ND	Loose, brown, fine to coarse SAND, some (+) Silt, little (+) Gravel (Brick, Asphalt, FILL).	2" ASPHALT		No
						4-4					Equipment
											Installed
5			S-2	24/14	5-7	6-11	ND	Medium dense, brown, fine to coarse SAND, some (+) Silt, little (+) Gravel, trace (-) Clay, Brick (FILL).			
						12-9			GRANULAR		
									FILL		
10			S-3	24/21	10-12	8-9	ND	Very stiff, olive-brown SILT and CLAY, little (+) fine to coarse Sand, Brick, Asphalt (FILL).			
						9-11					
									± 13.5'		
									SILT		
15			S-4	24/23	15-17	7-10	ND	Very stiff, olive-brown SILT and CLAY, little (-) fine Sand (moist).	AND		Backfill Material 0-32'
						8-12			CLAY		
									± 18.5'		
20			S-5	24/24	20-22	2-3	ND	Medium stiff, gray, Silty CLAY (moist, highly plastic).			
						4-4					
									GRAY		
									SILTY		
									CLAY		
25			S-6	24/24	25-27	1-4	ND	Medium stiff, gray, Silty CLAY (moist, highly plastic).			
						3-6					

Remarks

1. See Remark No. 1 on Boring Log GZA-1.

Stratification lines represent approximate boundaries between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to factors other than those present at the time measurements were made.

Boring No. GZA-6

GZA GEOENVIRONMENTAL, INC.
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CEDC - Parcel A

Chinatown/Boston, Massachusetts

Boring No. GZA-6
Page 2 of 2
File No. 12547
Chkd. By: FMG

DEPTH	CSNG	BLWS	Sample Information					Sample Description & Classification	Stratum Description	RMKS	Equipment Installed
			No.	Pen./Rec.	Depth (Ft.)	Blows/6"	HNu Test Data				No Equipment Installed
			S-7	24/24	30-32	2-2 4-4	ND	Medium stiff, gray Silty CLAY, little (-) fine Sand and Silt partings (moist, highly plastic).	GRAY SILT CLAY		Backfill Material 0-32'
								Bottom of Boring at 32 feet			
35											
40											
45											
50											
55											
60											

Remarks

tratification lines represent approximate boundaries between soil types, transitions may be gradual. Water level eadings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to factors ther than those present at the time measurements were made.

Boring No. GZA-6

GZA GeoEnvironmental, Inc.
Engineers/Scientists

320 Needham Street
Newton Upper Falls, Massachusetts 02164
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CEDC - Parcel A

Chinatown/Boston, Massachusetts

Boring No. GZA-7
Page 1 of 2
File No. 12547
Chkd. By: FMG

oring Co.	GZA Drilling, Inc.		Casing	Sampler
oreman	C. Lenling/P.Brown	Type	----	Split Spoon
ZA Rep.	M.A. Ponti, Jr./ck	I.D./O.D.	----	2"
ate Start	6/22/91 End 6/22/91	Hammer Wt.	----	140#
ocation	See Exploration Location Plan	Hammer Fall	----	30"
S.Elev.	Datum	Other	3-3/4" Hollow Stem Auger	

Groundwater Readings

Date	Time	Depth	Casing	Stab. Time
6/22/91	0930	11.1'	20'	0 Hours

DEPTH	CSNG BLWS	Sample Information No.	Pen./Rec.	Depth (Ft.)	Blows/6"	HNu Test Data	Sample Description & Classification	Stratum Description	RMKS	Equipment Installed
		S-1	24/17	0-2	8-6 5-9	ND	Medium dense, brown, fine to coarse SAND, some (+) Silt, little (+) Gravel (Brick, FILL).		1.	No Equipment Installed
5		S-2	24/11	5-7	26-38 43-87	0.6	Very dense, brown-gray, fine to coarse SAND, little (+) Silt, little (+) Gravel (Brick, Concrete, FILL).	GRANULAR FILL		
10		S-3	24/13	10-12	42-26 20-13	0.6	Dense, brown, fine to coarse SAND, some (+) Silt, little (+) Gravel (Wood, Brick, FILL).			
								± 13.5'		
15		S-4	24/15	15-17	9-1 1-4	NO	Soft, olive-brown and gray, Silty CLAY, little (+) fine Sand and Silt partings, lenses (moist, medium plastic).			Backfill Material 0-32'
20		S-5	24/22	20-22	3-4 5-7	0.8	Stiff, olive-gray, Silty CLAY, trace (-) fine to coarse Sand (Wood, wet).	GRAY SILTY CLAY		
25		S-6	24/24	25-27	2-3 3-3	NO	Medium stiff, gray, Silty CLAY (moist, highly plastic).			

Remarks

1. Refer to Remark No. 1 on Boring Log GZA-1.

Stratification lines represent approximate boundaries between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to factors other than those present at the time measurements were made.

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CEDC - Parcel A

Chinatown/Boston, Massachusetts

Boring No. GZA-7
Page 2 of 2
File No. 12547
Chkd. By: FMG

DEPTH	CSNG	BLWS	Sample Information					Sample Description & Classification	Stratum Description	RMKS	Equipment Installed
			No.	Pen./ Rec.	Depth (Ft.)	Blows/ 6"	HNu Test Data				
			S-7	24/24	30-32	2-3 4-6	ND	Medium stiff, gray, Silty CLAY (moist, highly plastic).			Backfill Material 0-32'
								Bottom of boring at 32 feet			
35											
40											
45											
50											
55											
60											

Remarks

Stratification lines represent approximate boundaries between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to factors other than those present at the time measurements were made.

Boring No. GZA-7

GZA GeoEnvironmental, Inc.
Engineers/Scientists

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CEDC - Parcel A

Chinatown/Boston, Massachusetts

Boring No. GZA-8
Page 1 of 2
File No. 12547
Chkd. By: FMG

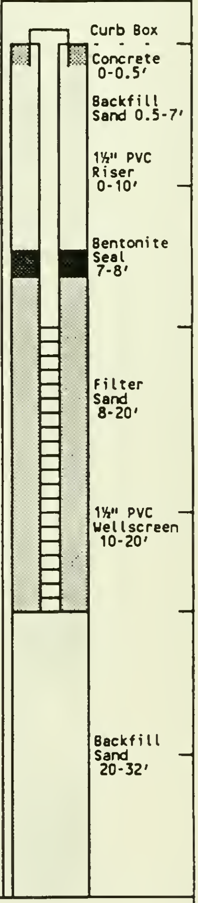
			Casing	Sampler
oring Co.	GZA Drilling, Inc.			
oreman	C. Lenling/P.Brown	Type	----	Split Spoon
ZA Rep.	M.A. Ponti, Jr./ck	I.D./O.D.	----	2"
ate Start 6/22/91	End 6/22/91	Hammer Wt.	----	140#
ocation See Exploration Location Plan		Hammer Fall	----	30"
S.Elev.	Datum	Other 3-3/4" Hollow Stem Auger		

Groundwater Readings

Date	Time	Depth	Casing	Stab. Time
6/22/91	1300	10.8'	Out	0 Hours
7/2/91	0800	9.78'	Out	± 10 Days

DPTH	CSNG BLWS	Sample Information No.	Pen./Rec.	Depth (Ft.)	Blows/6"	HNu Test Data	Sample Description & Classification	Stratum Description	RMKS
		S-1	24/15	0-2	9-14	1.8	Dense, dark brown, fine to coarse SAND, some (-) Silt (Brick, FILL).		1. 2.
					18-13				
5		S-2	24/16	5-7	16-21	ND	Dense, dark brown, fine to coarse SAND, some (+) Silt, little (+) Gravel, Brick, Concrete (FILL).	GRANULAR FILL	
					16-12				
10		S-3	24/13	10-12	1-2	ND	Very soft, black, Organic SILT, little (+) fine to coarse Sand (FILL).		
					1-2				
								± 13.5'	
15		S-4	24/22	15-17	5-6	ND	Stiff, olive, brown-gray, Silty CLAY (moist, highly plastic).		
		S-4A			8-8		S-4A: Stiff, olive brown-gray, Silty CLAY, trace (-) Wood (moist, highly plastic).	OLIVE BROWN SILTY CLAY	
20		S-5	24/23	20-22	2-3	ND	Medium stiff, olive brown-gray, Silty CLAY (moist, highly plastic).		
					3-3				
								± 23.5'	
25		S-6	24/24	25-27	2-2	ND	Medium stiff, gray, Silty CLAY, little (+) fine Sand/Silt lenses/laminae (moist, highly plastic).	GRAY SILTY CLAY	
					4-6				

Equipment Installed



Remarks

1. See Remark No. 1 on Boring Log GZA-1.
2. Locking curb box installed with concrete at ground surface.

Stratification lines represent approximate boundaries between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to factors other than those present at the time measurements were made.

Boring No. GZA-8

GZA GEOENVIRONMENTAL, INC.
Engineers/Scientists

320 Needham Street
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(617) 969-0050

CEDC - Parcel A

Chinatown/Boston, Massachusetts

Boring No. GZA-8
Page 2 of 2
File No. 12547
Chkd. By: FMG

DEPTH	CSNG	BLWS	Sample Information					Sample Description & Classification	Stratum Description	RMKS	Equipment Installed
			No.	Pen./ Rec.	Depth (Ft.)	Blows/ 6"	HNu Test Data				
			S-7	24/24	30-32	4-5	ND	Stiff, gray, Silty CLAY, trace (+) fine Sand and Silt layers, lenses and partings.	GRAY SILTY CLAY		Backfill Material 20-32'
						5-6					
								Bottom of boring at 32 feet			
35											
40											
45											
50											
55											
60											

Remarks

Stratification lines represent approximate boundaries between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to factors other than those present at the time measurements were made.

BRA PARCEL B - LABORATORY TEST RESULTS

LABORATORY TESTING DATA SUMMARY

Project Name ACDC-PARCEL B

Reviewed by
Date
Required

Project No. 12535 Project Engr. F. GRYNKEWICZ Assigned By F. GRYNKEWICZ Date Assigned JUNE 91

Boring or Test Pit No.	Sample No.	Depth ft.	Lab No.	IDENTIFICATION TESTS								DENSITY	Perme-ability cm/sec	STRENGTH TESTS					CONSOL.	Laboratory Log and Soil Description
				Water Content %	LL %	PL %	Sieve -200 %	Hyd -2μ %	ORG %	G_s	Dry unit wt. pcf	MAX (pcf) / W_{opt} (%)		Torvane or Type Test	$\bar{\sigma}_c$ psf	Failure Criteria	$\sigma_1 - \sigma_3$ or τ psf	Strain %	$\frac{C_c}{1 + e_0}$	
GZB-4	T-1	20-21	1		Average Total Unit Weight (20.0-21.0') = 123.9 Pcf															
		20.2		26.3										Tv= 1.15 tsf						Olive Grey Silty CLAY of high plasticity, very stiff consistency
		20.2-20.4		26.1	39	19														
		20.6		26.9										Tv= 1.28 tsf						
		20.8		26.8										Tv= 1.25 tsf						
		20.8-20.9		25.9	38	19														
	T-2	30-32	2		Average Total Unit Weight (30.0-32.0') = 118.9 Pcf															
		30.4		33.1										Tv= 0.75 tsf						Olive Grey Silty CLAY of high plasticity, stiff consistency
		30.6-30.7		36.8	25	16														Note:- 1/4" Sand layer @ 30.5' depth, - 2 1/2" Sand layer from 30.8'-31.1' depth, Numerous Silt lenses from 30.5-30.8' depth
		31.1		32.2										Tv= 0.53 tsf						
		31.3 31.4		37.5							85.0								0.20	
		31.4-31.6		34.4	45	23														
		31.7		33.2										Tv= 0.60 tsf						

GZA GEOENVIRONMENTAL, INC.
ENGINEERS AND SCIENTISTS

LABORATORY TESTING DATA SUMMARY

Project Name ACOC-PARCEL B

Reviewed by ______
Date ______
Required ______

Project No. 12535 Project Engr. F. GRYNKEWICZ Assigned By F. GRYNKEWICZ Date Assigned JUNE 91

Boring or Test Pit No.	Sample No.	Depth ft.	Lab No.	IDENTIFICATION TESTS								DENSITY		STRENGTH TESTS					CONSOL.	Laboratory Log and Soil Description
				Water Content %	LL %	PL %	Sieve -200 %	Hyd -2μ %	ORG %	G_s	Dry unit wt. pcf	MAX (pcf) / W_{opt} (%)	Permeability cm/sec	Torvane or Type Test	$\bar{\sigma}_c$ psf	Failure Criteria	$\sigma_1 - \sigma_3$ or τ psf	Strain %	$\frac{C_c}{1 + e_0}$	
GZB-1	T-1	40-42	3		Average Total Unit Weight (40.0-41.9') = 120.3 Pcf															Olive Grey Clayey SILT, little fine Sand @ 40.4' change to- Olive Grey Silty CLAY of high plasticity, stiff consiatency Note: Numerous thin Silt lenses and 2 - 1/2" Sand layers from 40.8-41.2' depth
		40.2		28.9																
		40.5		29.9										Tv= 0.59 tsf						
		40.5-40.7		25.3	41	21														
		41.0		30.6										Tv= 0.38 tsf						
		41.1-41.2		29.1	28	19														
		41.6		31.2										Tv= 0.51 tsf						
	T-2	50-52	4																	Olive Grey fine SAND and SILT, trace Clay layers @ 50.8' change to- Olive Grey CLAY & SILT, medium plasticity, medium consistency, trace (+) fine Sand
		50.2		21.7										Tv= 0.14 tsf						
		50.2-50.6		Save																
		50.6		23.5										Tv= 0.25 tsf						
		50.9-51.0		23.6	26	17														
		51.1		24.5										Tv= 0.33 tsf						
		51.4-51.5			31	18														

GZA GEOENVIRONMENTAL, INC.
ENGINEERS AND SCIENTISTS

Project Name ACDC-PARCEL B

LABORATORY TESTING DATA SUMMARY

Reviewed by
Date
Required

Project No. 12535
Project Engr. F. GRYNKEWICZ
Assigned By F. GRYNKEWICZ
Date Assigned JUNE 91

				IDENTIFICATION TESTS								DENSITY		STRENGTH TESTS					CONSOL.	
Boring or Test Pit No.	Sample No.	Depth ft.	Lab No.	Water Content %	LL %	PL %	Sieve -200 %	Hyd -2μ %	ORG %	G_s	Dry unit wt. pcf	MAX (pcf) / W_{opt} (%)	Permeability cm/sec	Torvane or Type Test	$\bar{\sigma}_c$ psf	Failure Criteria	$\sigma_1 - \sigma_3$ or τ psf	Strain %	$\frac{C_c}{1 + e_0}$	Laboratory Log and Soil Description
GZB-1	T-3	60-62	5		Average Total Unit Weight (60.0-61.9') = 124.7 Pcf															
		60.3		31.4										Tv= 0.62 tsf						Olive Grey CLAY & SILT of medium plasticity, stiff consistency, little f-c Sand, little (+) f-c Gravel.
		60.4-60.6		32.1	39	20														
		60.8		29.9										Tv= 0.82 tsf						
		61.4		31.3										Tv= 0.64 tsf						
		61.4-61.6		30.5	39	20														
	T-4	70-72	6		Average Total Unit Weight (70.0-71.5') = 115.0 Pcf															
		70.3		38.3										Tv= 0.39 tsf						Olive Grey CLAY & SILT of medium plasticity, medium to stiff consistency
		70.5		38.1										Tv_r=.055 tsf						
		70.5-70.6			39	21														
		70.8		35.7										Tv= 0.70 tsf						
		70.8-71.0		38.4	40	21					83.1								0.16	
		71.1		35.8										Tv_r=0.12 tsf						
		71.2		43.0										Tv= 0.40 tsf						

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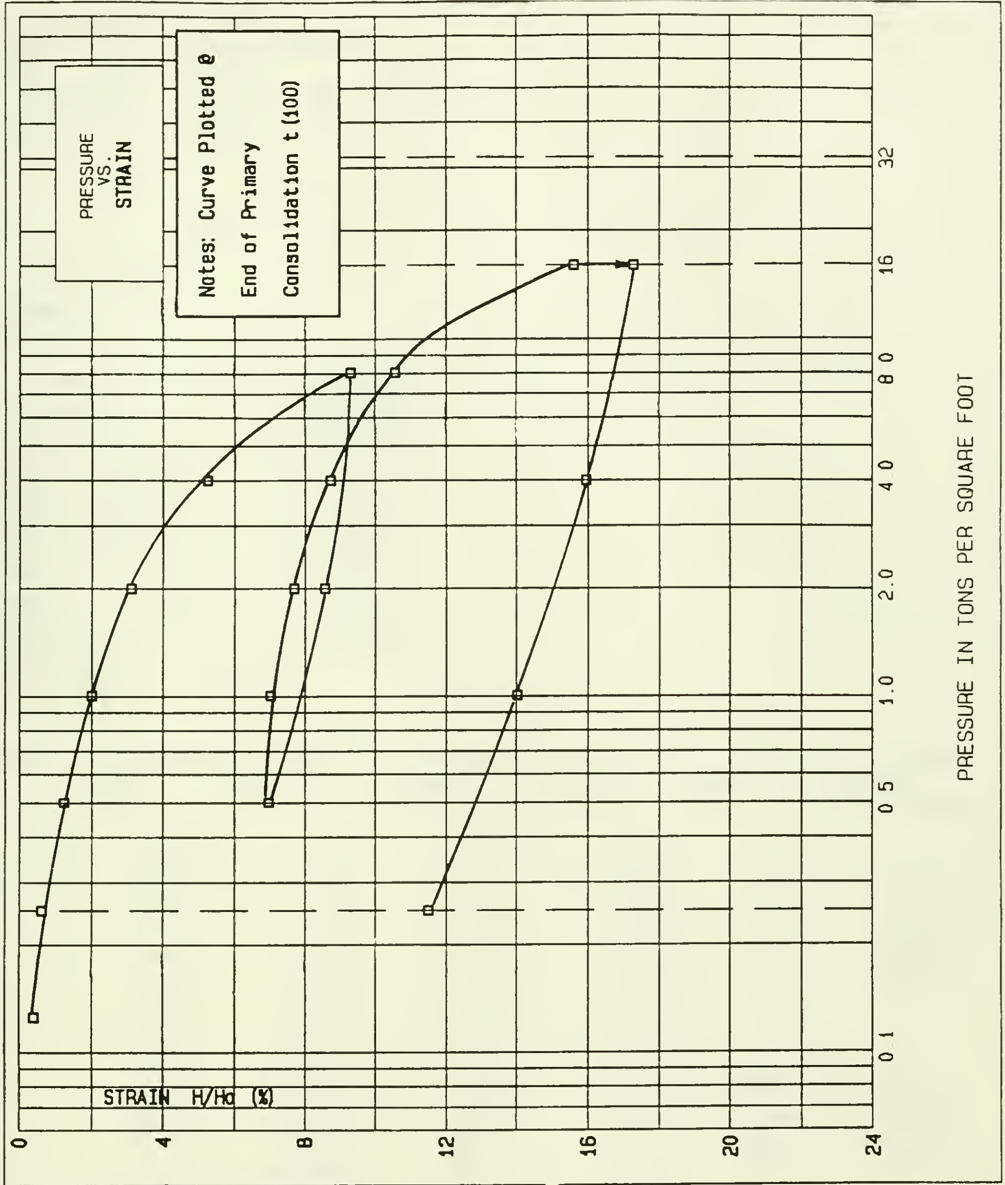


SOIL DESCRIPTION: **Olive Grey CLAY & SILT**

SAMPLE DIAM **2.5** IN. LIQUID LIMIT **45** % PLASTIC LIMIT **23** % SPECIFIC GRAVITY **2.70**

	WATER CONTENT, %	DRY UNIT WEIGHT, pcf	VOID RATIO	SATURATION, %	SAMPLE HEIGHT, INCH
INITIAL	37.50	84.95			0.80
FINAL	31.50	95.72			0.71

ACDC-PARCEL B
CONSOLIDATION TEST

BORING NO. **GZB-4**
SAMPLE **T-2**
DEPTH **31.3-31.4'**
TECH. **BM**
REVIEWER **DAS**

TEST SERIES NO. **C2.1**
DATE **7/30/91**
FILE **12535**

FIGURE

GZA GEOENVIRONMENTAL, INC.
ENGINEERS AND SCIENTISTS

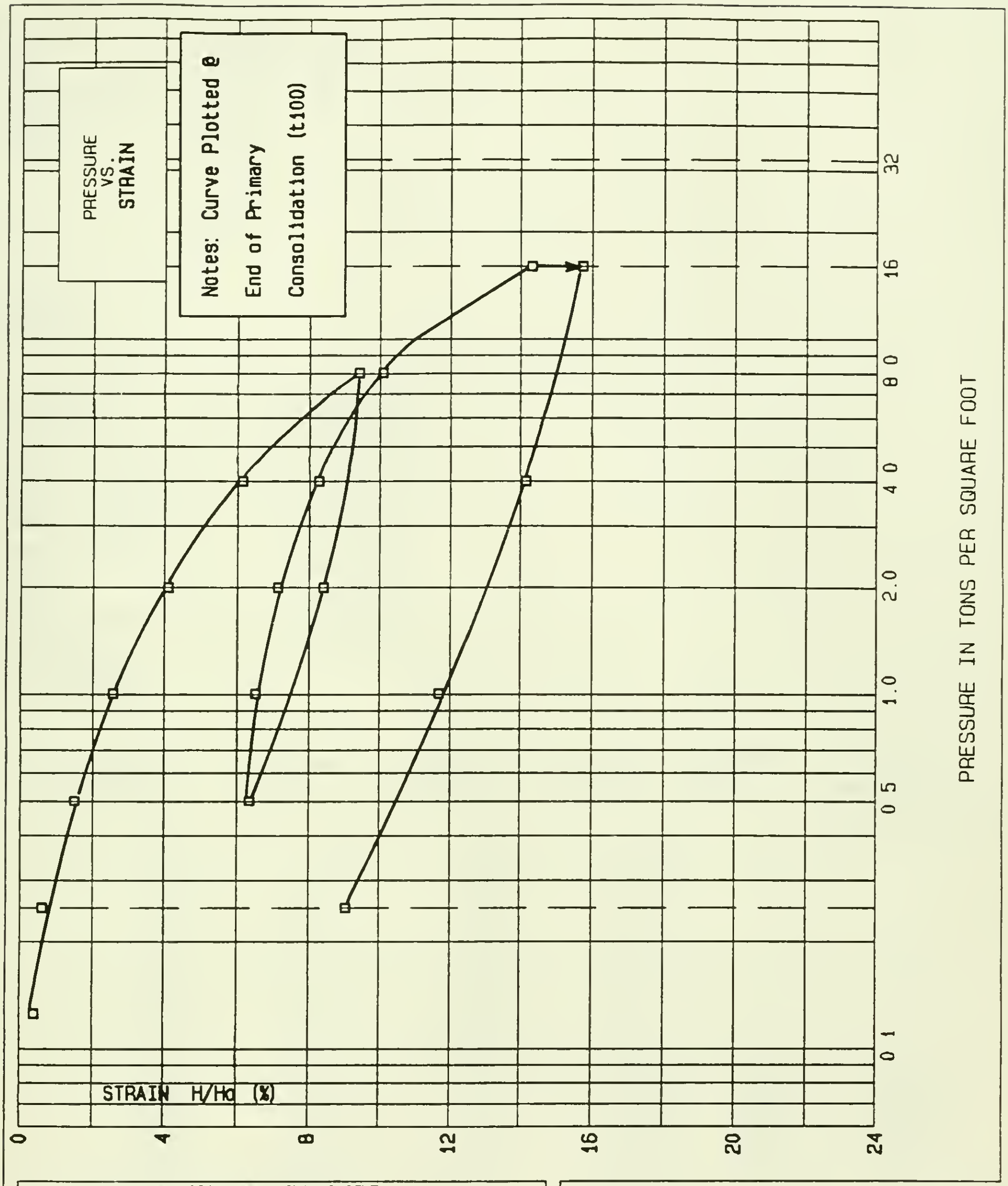
```
b Number .......... 12535
oject Name ........ ACDC-PARCEL B
st Number ......... C2.1
mple Description .. Olive Grey CLAY & SILT
ring Number ....... GZB-4
mple Number ....... T-2
pth ............... 31.3-31.4'

chnician .......... BM
viewer ............ DAS

TES: Curve Plotted @
d of Primary
nsolidation t(100)

ecific Gravity ......... 2.7000E+00
mple Dry Weight ........ 8.7570E+01
mple Diameter .......... 2.5000E+00
itial Void Ratio ....... 0.0000E+00
itial Sample Height .... 8.0000E-01
nal Sample Height ...... 7.1000E-01
itial Water Content .... 3.7500E+01
nal Water Content ...... 3.1500E+01
quid Limit ............. 4.5000E+01
astic Limit ............ 2.3000E+01
itial Saturation ....... 0.0000E+00
nal Saturation ......... 0.0000E+00
0 data excluded
0 data included


ncrement      Pressure     Final      Percent      Void      T90      Cv (T90)
ber          (TSF)        Dial       Strain       Ratio    (min)    (/10000)
                                                                    (Cm²/sec)  Cα
    1          0.000         0.0        0.00       0.983
    2          0.125        33.0        0.41       0.975
    3          0.250        51.0        0.64       0.971      1.4      103.12
    4          0.500        99.0        1.24       0.959      2.0       71.58
    5          1.000       161.0        2.01       0.943      2.0       70.59
    6          2.000       249.0        3.11       0.922      2.3       60.22
    7          4.000       420.0        5.25       0.879      4.8       27.91
    8          8.000       745.0        9.31       0.799      6.8       18.44
    9          2.000       687.0        8.59       0.813
   10          0.500       558.0        6.97       0.845
   11          1.000       562.0        7.02       0.844      2.3       54.86
   12          2.000       617.0        7.71       0.830      2.6       48.15
   13          4.000       699.0        8.74       0.810      2.6       47.26
   14          8.000       845.0       10.56       0.774      4.0       29.77
   15         16.000      1249.0       15.61       0.674      7.8       14.13
   16         16.000      1384.0       17.30       0.640                          .0065
   17          4.000      1277.0       15.96       0.667
   18          1.000      1122.0       14.02       0.705
   19          0.250       921.0       11.51       0.755
```



Notes: Curve Plotted @ End of Primary Consolidation (t100)

SOIL DESCRIPTION: **Olive Grey CLAY & SILT**

SAMPLE DIAM **2.5** IN. LIQUID LIMIT **40** % PLASTIC LIMIT **21** % SPECIFIC GRAVITY **2.70**

	WATER CONTENT, %	DRY UNIT WEIGHT, pcf	VOID RATIO	SATURATION, %	SAMPLE HEIGHT, INCH
INITIAL	38.40	83.06			0.80
FINAL	34.40	91.27			0.73

ACDC-PARCEL B
CONSOLIDATION TEST

BORING NO.	GZB-1	TEST SERIES	
SAMPLE	T-4	NO.	C5.1
DEPTH	70.8-71.0'	DATE	7/30/91
TECH.	BM		
REVIEWER	DAS	FILE	12535

FIGURE ______

```
b Number .......... 12535
oject Name ........ ACDC-PARCEL B
st Number ......... C6.1
mple Description .. Olive Grey CLAY & SILT
ring Number ....... GZB-1
mple Number ....... T-4
pth ............... 70.8-71.0'

chnician .......... BM
viewer ............ DAS

TES: Curve Plotted @
d of Primary
nsolidation (t100)

ecific Gravity ......... 2.7000E+00
mple Dry Weight ........ 8.5620E+01
mple Diameter .......... 2.5000E+00
itial Void Ratio ....... 0.0000E+00
itial Sample Height .... 8.0000E-01
nal Sample Height ...... 7.2800E-01
itial Water Content .... 3.8400E+01
nal Water Content ...... 3.4400E+01
quid Limit ............. 4.0000E+01
astic Limit ............ 2.1000E+01
itial Saturation ....... 0.0000E+00
nal Saturation ......... 0.0000E+00
0 data excluded
0 data included

ncrement    Pressure     Final     Percent      Void     T90      Cv (T90)
ber         (TSF)        Dial      Strain       Ratio   (min)    (/10000)
                                                                 ( cm²/sec)   Cα
   1          0.000        0.0       0.00       1.028
   2          0.125       33.0       0.41       1.020
   3          0.250       50.0       0.63       1.016
   4          0.500      120.0       1.50       0.998
   5          1.000      206.0       2.57       0.976
   6          2.000      330.0       4.12       0.945
   7          4.000      491.0       6.14       0.904
   8          8.000      753.0       9.41       0.837
   9          2.000      675.0       8.44       0.857
  10          0.500      510.0       6.37       0.899
  11          1.000      523.0       6.54       0.896     3.6        35.46
  12          2.000      571.0       7.14       0.884     6.8        18.62
  13          4.000      664.0       8.30       0.860     7.8        15.93
  14          8.000      808.0      10.10       0.824     9.0        13.36
  15         16.000     1145.0      14.31       0.738    13.0         8.65
  16         16.000     1259.0      15.74       0.709                       .0041
  17          4.000     1133.0      14.16       0.741
  18          1.000      936.0      11.70       0.791
  19          0.250      725.0       9.06       0.845
```

LABORATORY TEST PROCEDURES

ACDC-PARCEL B
BOSTON, MASS.
12535

1. The following tests were performed with the noted ASTM test designation:

TEST	ASTM DESIGNATION
Consolidation Properties	D2435-80 (see Item 2)
Moisture Content	D2216-80
Liquid and Plastic Limits	D4318-84

2.0 Test Procedures for Consolidation Properties (Addenda)

The procedure outlined under ASTM designation D2435-80 was used as a guide during consolidation testing. Undisturbed samples were trimmed by means of a soil lathe, carving each specimen to test dimensions of 2.50 inches diameter and 0.80 inch height. The sample was weighed, placed in a consolidometer and there seated under a load of 1/8 tons per square foot. This load was sequentially doubled (1/8-1/4 tsf, 1/4-1/2 tsf, 1/2-1 tsf, etc.).

All of the test samples were rebounded after the maximum past pressure (σ_{vm}) was defined. Unloading was accomplished in two steps to 1/2 tsf.

Using the doubling sequence established during the initial loading, the sample was then reloaded to a maximum of 16 tons per square foot. Each load and/or unload was allowed to act for a controlled time increment. In this case, the increment used was the end of calculated primary consolidation (t100), except for the final load which was held for a sufficient time period to define the coefficent of secondary consolidation. During application of these and all other loads, the change in thickness of the sample was recorded at regular time intervals.

A final rebound sequence followed (16-4, 4-1, 1-1/4), and the sample was removed, weighed, and oven dried for water content determination.

BRA PARCEL A - LABORATORY TEST RESULTS

Project Name CEDC-PARCEL A
BOSTON, MASS.

LABORATORY TESTING DATA SUMMARY

Reviewed by
Date
Required

Project No. 12547 Project Engr. MMK Assigned By MMK Date Assigned JULY 91

Boring or Test Pit No.	Sample No.	Depth ft.	Lab No.	IDENTIFICATION TESTS								DENSITY		STRENGTH TESTS					CONSOL.	Laboratory Log and Soil Description
				Water Content %	LL %	PL %	Sieve -200 %	Hyd -2μ %	ORG %	G_s	Dry unit wt. pcf	MAX (pcf) / W_{opt} (%)	Perme-ability cm/sec	Torvane or Type Test	$\bar{\sigma}_c$ psf	Failure Criteria	$\sigma_1 - \sigma_3$ or τ psf	Strain %	$\frac{C_c}{1 + e_0}$	
GZA-2	T-3	60-62	2																	Olive Grey CLAY & SILT of medium plasticity, stiff consistency
		60.2		30.8										Tv= 0.50 tsf						
		60.2-60.3		30.4	39	20														
		60.6		30.5										Tv= 0.55 tsf						
		60.6-60.7		30.3	40	19														
		60.7-60.8		30.4							93.9								0.12	
		60.9		31.2										Tv= 0.52 tsf						
		60.9-61.3		Save																
		61.3		30.5										Tv= 0.57 tsf						

GZA GEOENVIRONMENTAL, INC.
ENGINEERS AND SCIENTISTS

Project Name CEDC-PARCEL A
BOSTON, MASS.

LABORATORY TESTING DATA SUMMARY

Reviewed by
Date

Project No. 12547 Project Engr. MMK Assigned By MMK Date Assigned JULY 91 Required

				IDENTIFICATION TESTS								DENSITY		STRENGTH TESTS					CONSOL.	
Boring or Test Pit No.	Sample No.	Depth ft.	Lab No.	Water Content %	LL %	PL %	Sieve -200 %	Hyd -2μ %	ORG %	G_s	Dry unit wt. pcf	MAX (pcf) / W_{opt} (%)	Perme-ability cm/sec	Torvane or Type Test	$\bar{\sigma}_c$ psf	Failure Criteria	$\sigma_1 - \sigma_3$ or τ psf	Strain %	$\frac{C_c}{1 + e_0}$	Laboratory Log and Soil Description
GZA-2	T-4	70-72	3		Average Total Unit Weight (70.0-71.9') = 116.2 Pcf															
		70.2		41.0										Tv= 0.56 tsf						Olive Grey CLAY & SILT of medium plasticity, medium-stiff consistency
		70.2-70.3		41.0	41	24														Grading to-
		70.5		41.8										Tv= 0.49 tsf						Olive Grey Silty CLAY of high plasticity, stiff consistency
		70.7-70.8		39.4										Tv= 0.45 tsf Tv_r=0.06 tsf						
		71.1		35.7										Tv= 0.44 tsf						
		71.3-71.4		40.8										Tv_r=0.09 tsf						
		71.5		43.1										Tv= 0.67 tsf						
		71.5-71.6		37.6	42	21														
		71.6-71.7		37.6							85.4								0.18	

GZA GEOENVIRONMENTAL, INC.
ENGINEERS AND SCIENTISTS

Project Name CEOC-PARCEL A
BOSTON, MASS.

LABORATORY TESTING DATA SUMMARY

Reviewed by
Date
Required

Project No. 12547 Project Engr. MMK Assigned By MMK Date Assigned JULY 91

				IDENTIFICATION TESTS								DENSITY		STRENGTH TESTS					CONSOL.	
Boring or Test Pit No.	Sample No.	Depth ft.	Lab No.	Water Content %	LL %	PL %	Sieve -200 %	Hyd -2μ %	ORG %	G_s	Dry unit wt. pcf	MAX (pcf) / W_{opt} (%)	Perme-ability cm/sec	Torvane or Type Test	$\bar{\sigma}_c$ psf	Failure Criteria	$\sigma_1 - \sigma_3$ or τ psf	Strain %	$\frac{C_c}{1 + e_0}$	Laboratory Log and Soil Description
GZA-2	T-1	40-42	4		Average Total Unit Weight (40.0-41.9) = 124.3 Pcf															
		40.2		34.4										Tv= 0.63 tsf						Olive Grey CLAY & SILT of medium plasticity, stiff consistency
		40.2-40.6		Save																Note: Numerous thin Silt lenses throughout sample
		40.6-40.7		25.5	32	16														
		40.8		30.8										Tv= 0.55 tsf						
		41.0		26.7																
		41.3		25.5										Tv= 0.53 tsf						
		41.4-41.5		31.5	41	20														
		41.7-41.8		33.4										Tv= 0.67 tsf						

GZA GEOENVIRONMENTAL, INC.
ENGINEERS AND SCIENTISTS

Project Name CEDC-PARCEL A
BOSTON, MASS.

LABORATORY TESTING DATA SUMMARY

Reviewed by ______
Date ______

Project No. 12547 Project Engr. MMK Assigned By MMK Date Assigned JULY 91 Required ______

				IDENTIFICATION TESTS								DENSITY		STRENGTH TESTS					CONSOL.	
Boring or Test Pit No.	Sample No.	Depth ft.	Lab No.	Water Content %	LL %	PL %	Sieve -200 %	Hyd -2μ %	ORG %	G_s	Dry unit wt. pcf	MAX (pcf) / W_{opt} (%)	Perme-ability cm/sec	Torvane or Type Test	$\bar{\sigma}_c$ psf	Failure Criteria	$\sigma_1 - \sigma_3$ or τ psf	Strain %	$\frac{C_c}{1 + e_0}$	Laboratory Log and Soil Description
GZA-5	T-1	25-27	5		Average Total Unit Weight (25.0-26.9') = 120.5 Pcf															
		25.3		30.7										Tv= 0.47 tsf						Olive Grey CLAY & SILT of medium plasticity, medium-stiff consistency Note: Numerous thin Silt lenses throughout sample, also Brick fragments & coarse Gravel @ 25.2' depth
		25.4-25.5		31.8	38	19														
		25.7		33.3										Tv= 0.60 tsf						
		26.0		27.4										Tv= 0.73 tsf						
		26.1-26.2		27.9	31	17														
		26.2-26.3		28.0							97.4								0.13	
		26.9		27.5										Tv= 0.63 tsf						

GZA GEOENVIRONMENTAL, INC.
ENGINEERS AND SCIENTISTS

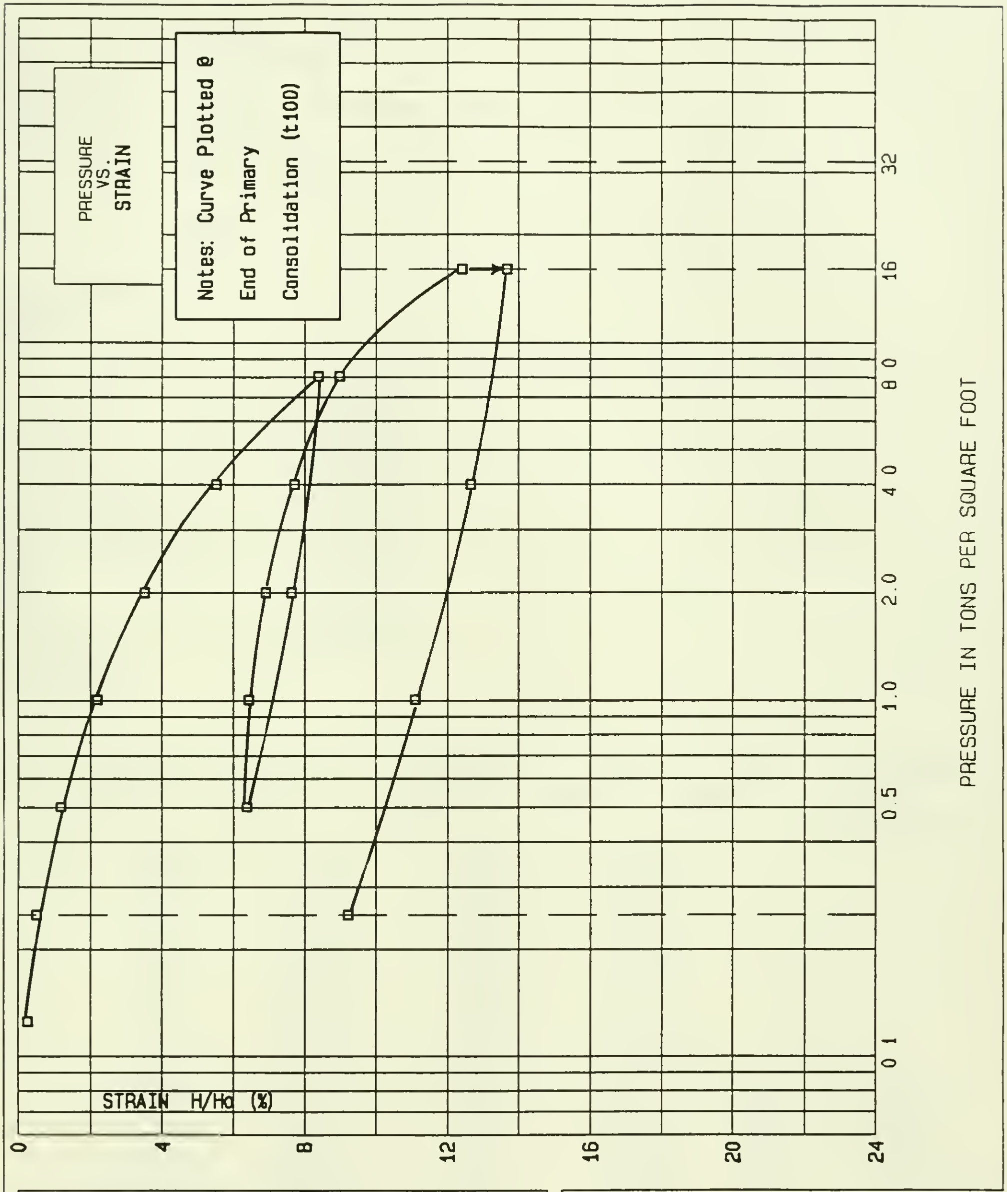
LABORATORY TESTING DATA SUMMARY

Project Name CEDC-PARCEL A
BOSTON, MASS.

Reviewed by
Date
Required

Project No. 12547 Project Engr. MMK Assigned By MMK Date Assigned JULY 91

				IDENTIFICATION TESTS								DENSITY		STRENGTH TESTS					CONSOL.	
Boring or Test Pit No.	Sample No.	Depth ft.	Lab No.	Water Content %	LL %	PL %	Sieve -200 %	Hyd -2μ %	ORG %	G_s	Dry unit wt. pcf	MAX (pcf) / W_{opt} (%)	Perme-ability cm/sec	Torvane or Type Test	$\bar{\sigma}_c$ psf	Failure Criteria	$\sigma_1 - \sigma_3$ or τ psf	Strain %	$\frac{C_c}{1 + e_0}$	Laboratory Log and Soil Description
GZA-5	T-2	35-37	6		Average Total Unit Weight (35.0-36.6') = 119.9 Pcf															
		35.3		28.4										Tv= 0.47 tsf						Olive Grey Silty CLAY of high plasticity, medium-stiff consistency
		35.3-35.8		Save																Note: Numerous thin Silt lenses throughout sample
		35.8		32.3										Tv= 0.65 tsf						
		35.9-36.0		27.0	46	20														
		36.1-36.2			33	17	(Test taken in area of Numerous Silt lenses)													
		36.3		27.6										Tv= 0.36 tsf						



SOIL DESCRIPTION: **Olive Grey Silty CLAY**

SAMPLE DIAM **2.5** IN. LIQUID LIMIT **49** % PLASTIC LIMIT **21** % SPECIFIC GRAVITY **2.70**

	WATER CONTENT, %	DRY UNIT WEIGHT, pcf	VOID RATIO	SATURATION, %	SAMPLE HEIGHT, INCH
INITIAL	30.90	92.33			0.80
FINAL	28.00	101.75			0.73

CEDC-PARCEL A
CONSOLIDATION TEST

BORING NO.	GZA-2	TEST SERIES	
SAMPLE	T-2	NO.	C1.1
DEPTH	50.3-50.4'	DATE	7/30/91
TECH.	MST		
REVIEWER	DAS	FILE	12547

FIGURE

GZA GEOENVIRONMENTAL, INC.
ENGINEERS AND SCIENTISTS

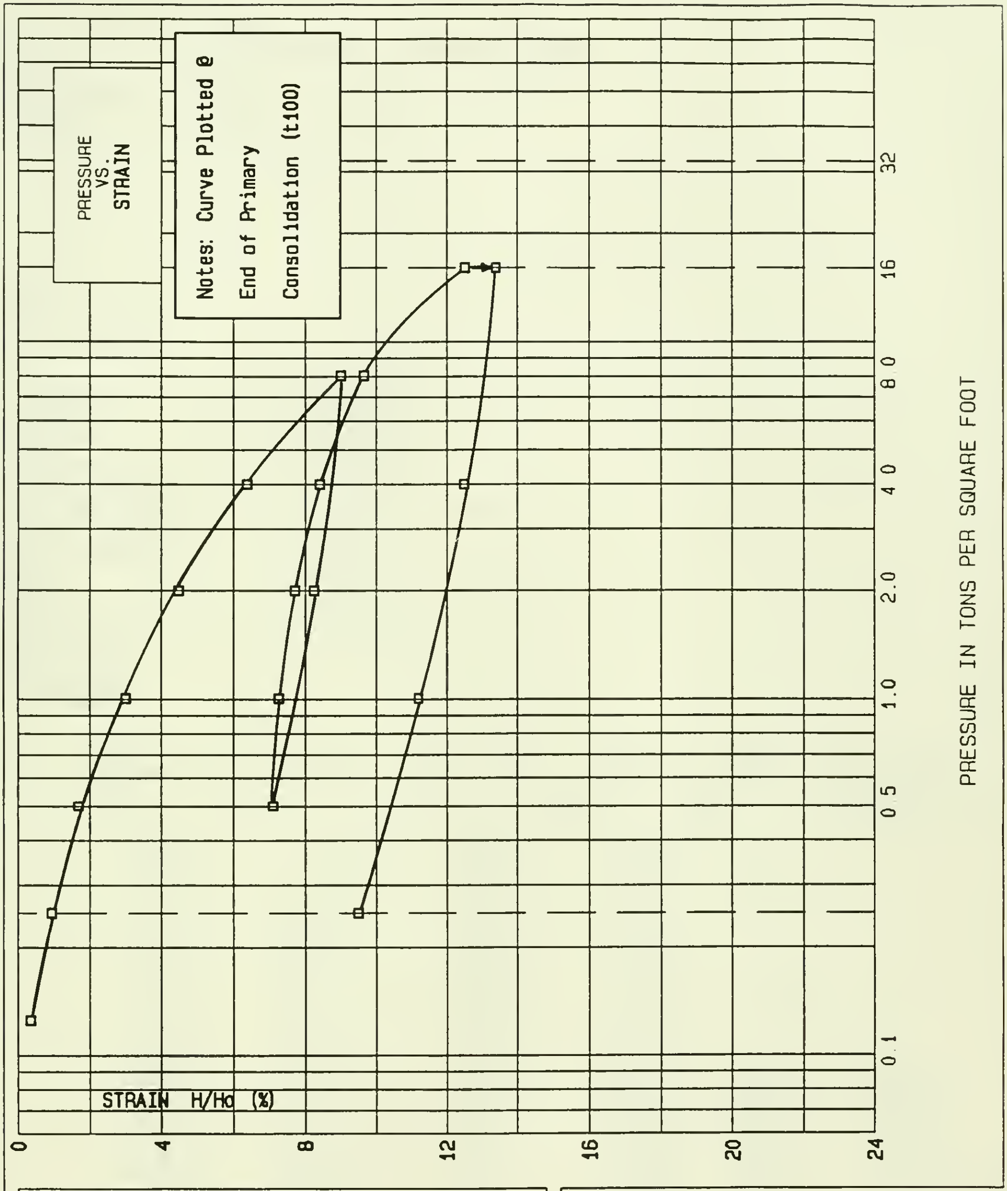
```
ob Number .......... 12547
roject Name ........ CEDC-PARCEL A
est Number ......... C1.1
ample Description .. Olive Grey Silty CLAY
oring Number ....... GZA-2
ample Number ....... T-2
epth ............... 50.3-50.4'

echnician .......... MST
eviewer ............ DAS

OTES: Curve Plotted @
nd of Primary
onsolidation (t100)

pecific Gravity ......... 2.7000E+00
ample Dry Weight ........ 9.5180E+01
ample Diameter .......... 2.5000E+00
nitial Void Ratio ....... 0.0000E+00
nitial Sample Height .... 8.0000E-01
inal Sample Height ...... 7.2600E-01
nitial Water Content .... 3.0900E+01
inal Water Content ...... 2.8000E+01
iquid Limit ............. 4.9000E+01
lastic Limit ............ 2.1000E+01
nitial Saturation ....... 0.0000E+00
inal Saturation ......... 0.0000E+00
50 data excluded
90 data included


Increment     Pressure      Final      Percent      Void     T90      Cv (T90)
mber          (TSF)         Dial       Strain       Ratio   (min)     (/10000)      Cr
                                                                      (cm²/sec)
    1          0.000          0.0        0.00       0.825
    2          0.125         23.0        0.29       0.819
    3          0.250         42.0        0.52       0.815
    4          0.500         95.0        1.19       0.803
    5          1.000        177.0        2.21       0.784
    6          2.000        282.0        3.52       0.760
    7          4.000        442.0        5.52       0.724
    8          8.000        672.0        8.40       0.671
    9          2.000        612.0        7.65       0.685
   10          0.500        511.0        6.39       0.708
   11          1.000        515.0        6.44       0.707     2.6        49.15
   12          2.000        554.0        6.92       0.698     2.9        43.81
   13          4.000        618.0        7.72       0.684     3.2        39.16
   14          8.000        720.0        9.00       0.660     3.2        38.28
   15         16.000        994.0       12.42       0.598     6.3        18.46
   16         16.000       1095.0       13.69       0.575                          .0036
   17          4.000       1012.0       12.65       0.594
   18          1.000        889.0       11.11       0.622
   19          0.250        739.0        9.24       0.656
```



SOIL DESCRIPTION: **Olive Grey CLAY & SILT**			
SAMPLE DIAM **2.5** IN.	LIQUID LIMIT **40** %	PLASTIC LIMIT **19** %	SPECIFIC GRAVITY **2.70**

	WATER CONTENT, %	DRY UNIT WEIGHT, pcf	VOID RATIO	SATURATION, %	SAMPLE HEIGHT, INCH
INITIAL	**30.40**	**93.91**			**0.80**
FINAL	**25.30**	**103.76**			**0.72**

CEDC-PARCEL A BOSTON, MASS.
CONSOLIDATION TEST

BORING NO. **GZA-2**
SAMPLE **T-3**
DEPTH **50.7-50.8'**
TECH. **MST**
REVIEWER **DAS**

TEST SERIES NO. **C2.1**
DATE **7/30/91**
FILE **12547**

FIGURE

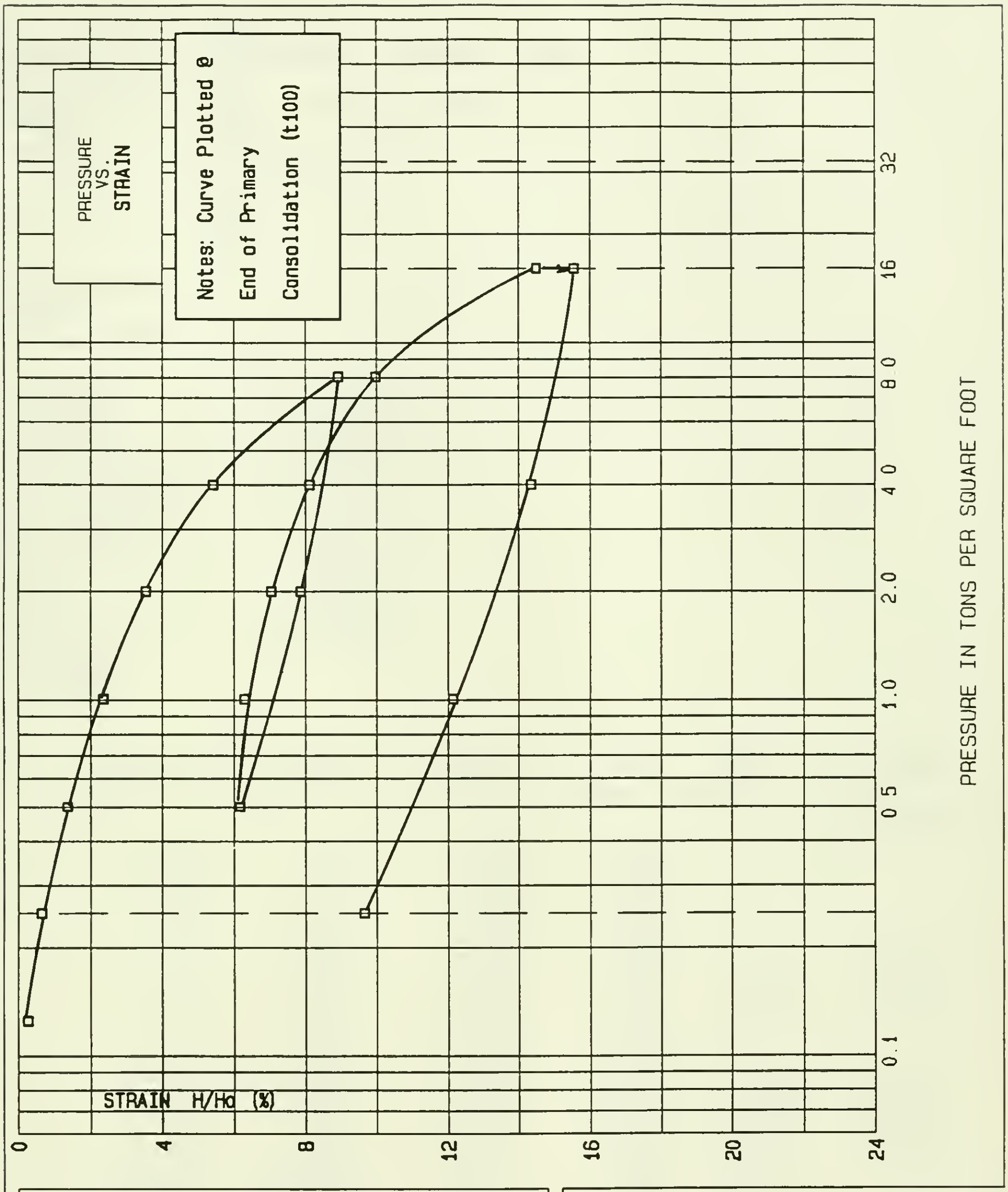
```
ob Number .......... 12547
roject Name ........ CEDC-PARCEL A  BOSTON, MASS.
est Number ......... C2.1
ample Description .. Olive Grey CLAY & SILT
oring Number ....... GZA-2
ample Number ....... T-3
epth ............... 60.7-60.8'

echnician .......... MST
eviewer ............ DAS

OTES: Curve Plotted @
nd of Primary
onsolidation (t100)

pecific Gravity ......... 2.7000E+00
ample Dry Weight ........ 9.6800E+01
ample Diameter .......... 2.5000E+00
nitial Void Ratio ....... 0.0000E+00
nitial Sample Height .... 8.0000E-01
inal Sample Height ...... 7.2400E-01
nitial Water Content .... 3.0400E+01
inal Water Content ...... 2.5300E+01
iquid Limit ............. 4.0000E+01
lastic Limit ............ 1.9000E+01
nitial Saturation ....... 0.0000E+00
inal Saturation ......... 0.0000E+00
50 data excluded
90 data included


Increment      Pressure      Final      Percent      Void     T90      Cv (T90)
nber           (TSF)        Dial       Strain       Ratio   (min)    (/10000)    Cα
                                                                     (cm²/sec)
    1           0.000         0.0        0.00       0.794
    2           0.125        29.0        0.36       0.788
    3           0.250        76.0        0.95       0.777
    4           0.500       136.0        1.70       0.764
    5           1.000       242.0        3.02       0.740
    6           2.000       360.0        4.50       0.713
    7           4.000       512.0        6.40       0.679
    8           8.000       722.0        9.02       0.632
    9           2.000       662.0        8.27       0.646
   10           0.500       569.0        7.11       0.667
   11           1.000       582.0        7.27       0.664     6.3       19.95
   12           2.000       618.0        7.72       0.656     6.3       19.81
   13           4.000       675.0        8.44       0.643     5.8       21.25
   14           8.000       772.0        9.65       0.621     6.3       19.16
   15          16.000      1003.0       12.54       0.569     9.0       12.81
   16          16.000      1072.0       13.40       0.554                        .001
   17           4.000      1000.0       12.50       0.570
   18           1.000       896.0       11.20       0.593
   19           0.250       760.0        9.50       0.624
```



SOIL DESCRIPTION: **Olive Grey Silty CLAY**			
SAMPLE DIAM. 2.5 IN.	LIQUID LIMIT 42 %	PLASTIC LIMIT 21 %	SPECIFIC GRAVITY 2.70

	WATER CONTENT, %	DRY UNIT WEIGHT, pcf	VOID RATIO	SATURATION, %	SAMPLE HEIGHT, INCH
INITIAL	37.60	85.41			0.80
FINAL	32.40	94.50			0.72

CEDC-PARCEL A BOSTON, MASS.
CONSOLIDATION TEST

BORING NO.	**GZA-2**	TEST SERIES NO.	**C3.1**
SAMPLE	**T-4**	DATE	**7/30/91**
DEPTH	**71.5-71.7'**		
TECH.	**EH**		
REVIEWER	**DAS**	FILE	**12547**

FIGURE

GZA GEOENVIRONMENTAL, INC.
ENGINEERS AND SCIENTISTS

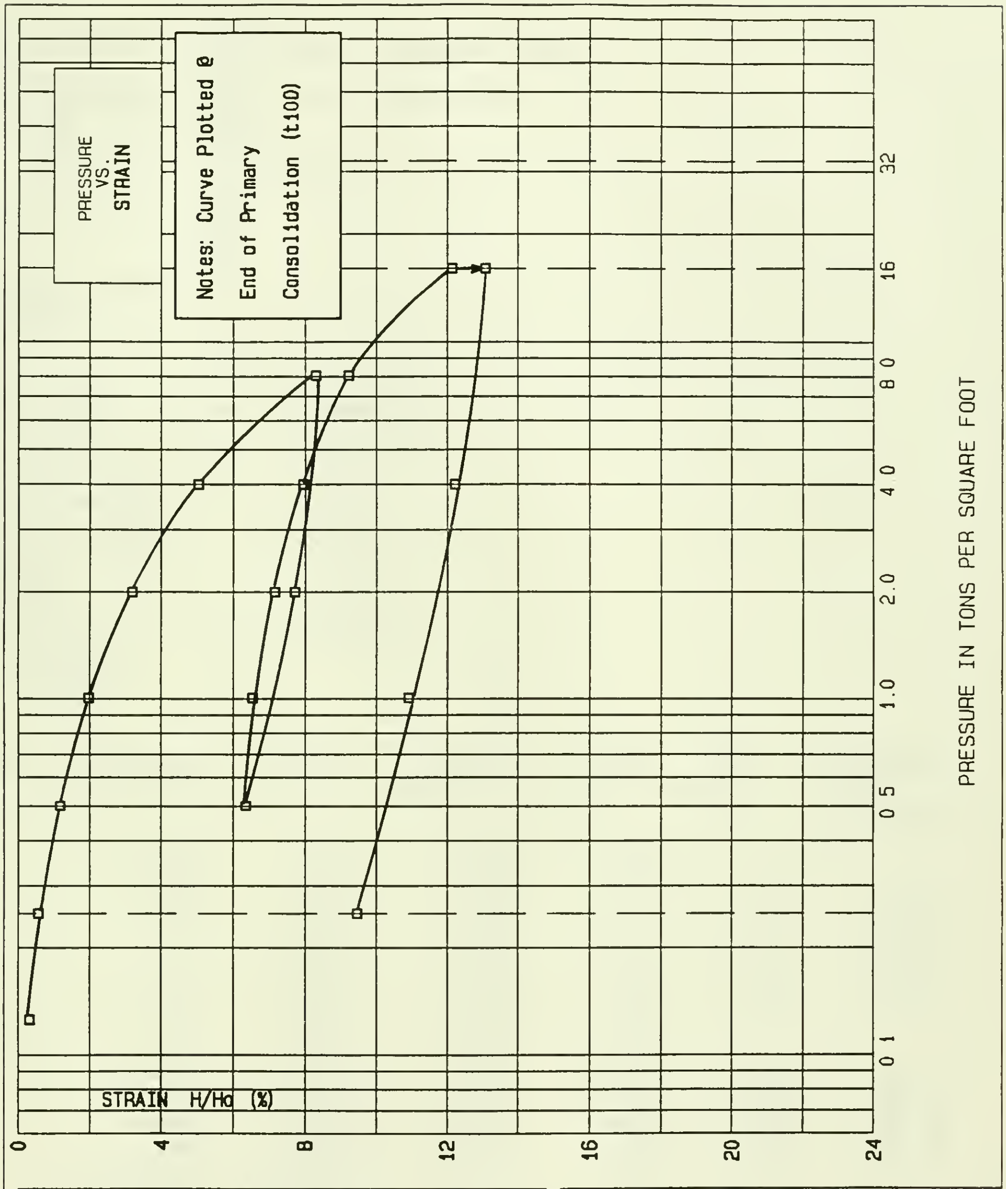
ob Number 12547
roject Name .... CEDC-PARCEL A BOSTON, MASS.
est Number C3.1
ample Description .. Olive Grey Silty CLAY
oring Number GZA-2
ample Number T-4
epth .... 71.6-71.7'

echnician .... EH
eviewer .... DAS

OTES: Curve Plotted @
nd of Primary
onsolidation (t100)

pecific Gravity .... 2.7000E+00
ample Dry Weight .... 8.8040E+01
ample Diameter .... 2.5000E+00
nitial Void Ratio .... 0.0000E+00
nitial Sample Height 8.0000E-01
inal Sample Height 7.2300E-01
nitial Water Content .... 3.7600E+01
inal Water Content ...... 3.2400E+01
iquid Limit .... 4.2000E+01
lastic Limit .... 2.1000E+01
nitial Saturation .... 0.0000E+00
inal Saturation .... 0.0000E+00
50 data excluded
90 data included

Increment umber	Pressure (TSF)	Final Dial	Percent Strain	Void Ratio	T90 (min)	Cv (T90) (/10000) (cm²/sec)	Co
1	0.000	0.0	0.00	0.973			
2	0.125	22.0	0.27	0.967			
3	0.250	53.0	0.66	0.960			
4	0.500	110.0	1.37	0.946			
5	1.000	189.0	2.36	0.926			
6	2.000	285.0	3.56	0.902	6.8	20.20	
7	4.000	435.0	5.44	0.865	7.8	17.06	
8	8.000	715.0	8.94	0.796	10.9	11.53	
9	2.000	631.0	7.89	0.817			
10	0.500	495.0	6.19	0.851			
11	1.000	504.0	6.30	0.848	4.0	32.06	
12	2.000	565.0	7.06	0.833	6.8	18.68	
13	4.000	650.0	8.12	0.812	6.3	19.77	
14	8.000	799.0	9.99	0.776	6.8	17.74	
15	16.000	1160.0	14.50	0.687	10.2	11.02	.004
16	16.000	1245.0	15.56	0.666			
17	4.000	1148.0	14.35	0.690			
18	1.000	973.0	12.16	0.733			
19	0.250	773.0	9.66	0.782			



SOIL DESCRIPTION: **Olive Grey CLAY & SILT**			
SAMPLE DIAM 2.5 IN.	LIQUID LIMIT 31 %	PLASTIC LIMIT 17 %	SPECIFIC GRAVITY 2.70

	WATER CONTENT, %	DRY UNIT WEIGHT, pcf	VOID RATIO	SATURATION, %	SAMPLE HEIGHT, INCH
INITIAL	28.00	97.38			0.80
FINAL	24.30	107.60			0.72

CEDC-PARCEL A BOSTON, MASS.
CONSOLIDATION TEST

BORING NO. GZA-5
SAMPLE T-1
DEPTH 25.2-25.3'
TECH. EH
REVIEWER DAS

TEST SERIES
NO. C5.1
DATE 7/30/91

FILE 12547

```
ob Number .......... 12547
roject Name ........ CEDC-PARCEL A BOSTON, MASS.
est Number ......... C5.1
ample Description .. Olive Grey CLAY & SILT
oring Number ....... GZA-5
ample Number ....... T-1
epth ............... 26.2-26.3'

echnician .......... EH
eviewer ............ DAS

OTES: Curve Plotted @
nd of Primary
onsolidation (t100)

pecific Gravity ......... 2.7000E+00
ample Dry Weight ........ 1.0038E+02
ample Diameter .......... 2.5000E+00
nitial Void Ratio ....... 0.0000E+00
nitial Sample Height .... 8.0000E-01
inal Sample Height ...... 7.2400E-01
nitial Water Content .... 2.8000E+01
inal Water Content ...... 2.4300E+01
iquid Limit ............. 3.1000E+01
lastic Limit ............ 1.7000E+01
nitial Saturation ....... 0.0000E+00
inal Saturation ......... 0.0000E+00
50 data excluded
90 data included


Increment     Pressure     Final     Percent     Void     T90     Cv (T90)
mber          (TSF)        Dial      Strain      Ratio    (min)   (/10000)
                                                                  (cm²/sec)

    1           0.000        0.0       0.00      0.730
    2           0.125       27.0       0.34      0.724
    3           0.250       45.0       0.56      0.720     1.4      103.27
    4           0.500       95.0       1.19      0.710     1.7       84.32
    5           1.000      160.0       2.00      0.696     1.4      100.91
    6           2.000      256.0       3.20      0.675     1.4       98.86
    7           4.000      405.0       5.06      0.643     1.4       95.78
    8           8.000      665.0       8.31      0.586     1.4       90.74
    9           2.000      618.0       7.72      0.596
   10           0.500      509.0       6.36      0.620
   11           1.000      524.0       6.55      0.617     0.8      159.58
   12           2.000      574.0       7.17      0.606     0.8      158.19
   13           4.000      637.0       7.96      0.592     0.8      155.80
   14           8.000      738.0       9.22      0.571     1.0      121.89
   15          16.000      973.0      12.16      0.520     2.0       58.18
   16          16.000     1048.0      13.10      0.503                        .00
   17           4.000      979.0      12.24      0.518
   18           1.000      873.0      10.91      0.541
   19           0.250      758.0       9.47      0.566
```

Project Name CEDC-PARCEL A
BOSTON, MASS.

LABORATORY TESTING DATA SUMMARY

Reviewed by
Date

Project No. 12547 Project Engr. MMK Assigned By MMK Date Assigned JULY 91 Required

				IDENTIFICATION TESTS								DENSITY		STRENGTH TESTS					CONSOL.	
Boring or Test Pit No.	Sample No.	Depth ft.	Lab No.	Water Content %	LL %	PL %	Sieve -200 %	Hyd -2μ %	ORG %	G_s	Dry unit wt. pcf	MAX (pcf) / W_{opt} (%)	Permeability cm/sec	Torvane or Type Test	$\bar{\sigma}_c$ psf	Failure Criteria	$\sigma_1 - \sigma_3$ or τ psf	Strain %	$\frac{C_c}{1 + e_0}$	Laboratory Log and Soil Description
GZA-2	T-2	50-52	1		Average Total Unit Weight (50.0-51.0') = 120.3 Pcf															
		50.1		32.1										Tv= 0.45 tsf						Olive Grey Silty CLAY of high plasticity, medium-stiff consistency
		50.2-50.3		30.2	49	21														
		50.3-50.4		30.9							92.3								0.14	
		50.4		32.1										Tv= 0.80 tsf						
		50.6-50.7		31.2	48	21														
		50.8		32.5										Tv= 0.70 tsf						

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ENGINEERS AND SCIENTISTS

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